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SOME PRINCIPLES OF DRUG TREATMENT IN CARDIOVASCULAR CONDITIONS.

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Therapy as a science has not kept pace with pathology and diagnosis, largely due to a lack of method that will enable us to place it on the same sure footing as the above-named branches. Its scientific basis rests chiefly on experiments on normal animals. The dosage and frequency of repetition has been left largely to clinical experience, which too frequently consists of personal impressions rather than conclusions from recorded facts, and certainly lacks the accuracy of a true science.

The pharmacologic action of a drug on a normal animal may have reached the certainty of a chemical test and yet give very misleading information as to its action or indications for its use on the diseased human. It now rests with clinicians, in conjunction with pharmacologists and physiologists, to take up this subject, and by experimental work on animals in which the disease has been artificially produced, and by bringing pharmacologic and physiologic methods to the bedside, to clear up this subject as far as the means at hand will permit.

With our modern clinical appliances for accurate determination of both systolic and diastolic blood pressure, the field of cardiovascular therapeutics is gradually being placed on a firm basis. In fact, there is no other therapy, except that of the specifics, that at the present time rests on such a scientific foundation.

The most important cardiac remedies may be divided into two groups: those which act chiefly on the heart—digitalis and strophanthus; and those whose chief action is on the vessels—the vasoconstrictors, adrenalin, caffein, camphor and strychnin, and the vasodilators, alcohol, nitroglycerin and the nitrites. In making such a subdivision we must bear in mind that they are all cardiovascular drugs affecting both heart and vessels, however, in varying degrees. It is not my intention to detail the indications for the use of cardiac remedies. In general, however, they are indicated when there is imperfect distribution of blood, due either to cardiac insufficiency or to a lack of the proper vascular tone.

THE DIGITALIS GROUP.

The digitalis group is, therefore, to be used in cases in which this improper distribution is dependent on heart insufficiency, the result either of valvular or of muscular changes. The idea that the digitalis group is contraindicated in myocarditis is not well grounded, although we must remember that greater care should be observed in regard to dosage and that the final results of the treatment must, from the nature of the trouble, be less satisfactory than in valvular lesions with good heart muscle. This group is, furthermore, not necessarily contraindicated in cardiac trouble with marked arteriosclerosis, or high blood pressure, as it is rare that in the physiologic doses these drugs increase blood pressure sufficiently to endanger the vessel wall. Sahli[1] has shown that cardiac insufficiency may be associated with high blood pressure which has its basis in stimulation of the vasomotor centers by the poorly oxygenated blood; improve the pulmonary circulation and the blood pressure falls. Heart insufficiency associated with slow pulse is often relieved by digitalis, due to a more complete emptying of the heart in each systole, better circulation in the coronary vessels, with consequently improved nutrition of the heart muscle. There is still considerable difference of opinion as to the value of digitalis in aortic regurgitation on account of its prolonging diastole. It is generally conceded that the prognosis in incompensated aortic regurgitation is bad, probably, as Sahli has suggested, due to the presence of essential passive congestion; that is to say, the leakage is so marked, before evidence of incompensation occurs, that even with complete systole and normal diastole it is impossible to maintain the proper amount of blood in the arterial system, while in mitral lesions, on account of the early passive congestion in the lungs, the individual is conscious of the disturbed compensation before the stage of essential passive congestion is reached.

It is well to remember that digitalis increases the systolic output, which compensates in a measure for the greater amount that returns during diastole and, even prolonging the diastole, has its advantage, as it allows the auricle to empty itself more completely. Finally, the recent painstaking work of Stewart[2] has shown that, after all, the amount of regurgitating blood is slight and prolonging the diastole is not a serious matter.

The action of the various members of the digitalis group of drugs is practically identical; the main difference is one of degree and some slight differences in the amount of vasoconstrictor action. The less well-known members of this group — convallaria, apocynum and cactus—do not possess any advantage over digitalis, are much less constant in action and will not be discussed.

Digitalis.—Since Traube's time it has been a disputed question whether digitalis acts principally on the heart or on the blood vessels, and whether the increase in blood pressure is chiefly of cardiac or of vascular origin. The recent work of Gottlieb and Magnus,[3] now generally accepted, shows that the chief action is on the heart, the rise in pressure being due to more complete systole with a consequently greater flow of blood into the aorta. Its vascular action is chiefly constriction of the splanchnic arteries with dilatation of the peripheral vessels, includ-

1. Verhandl. d. Cong. f. inn. Med., 1901, xix, 53.
2. Arch. Int. Med., 1908, i, 102.
3. Arch. f. exper. Path. u Pharmakol., 1902, xlviii, 262.

ing those in the brain, due partly to increased pressure exerted on the interior of the vessel, but mainly ascribed to a reflex stimulation of the vasodilator center arising from constriction of the splanchnics. The various active principles have a somewhat different effect from the crude drug. The digitoxin especially has a decidedly greater vasoconstrictor action, and dilatation of the peripheral vessels does not always follow. It is generally conceded that strophanthus has less vasoconstrictor action than entire digitalis, thus resembling digitalin.

In addition, all this group of drugs stimulate the vagus, causing slowing of the heart. As a result of the more complete systole the output of blood with each ventricular contraction is much increased, and Gottlieb has shown that the systolic output in a cat may be increased threefold by digitalis. This would lead to a very marked rise in blood pressure, were it not associated with lessened engorgement of the right heart, and better emptying of the veins, thus lessening the peripheral resistance to the arterial blood. For this reason marked increased systolic output after digitalis does not necessarily mean increased blood pressure.

It is unfortunate that a drug which possesses such a desirable physiologic action should also have its objectionable features. The chief of these is its variable strength, irritating action on the gastrointestinal tract, and, finally, its cumulative effects. The physiologic activity of the leaf depends on the soil in which it is grown, the time of year it is gathered, the method of drying, and especially the length of time it has been kept in the dried state. Not merely does it vary in strength, but the proportion of the various active principles is not constant. Focke[4] has shown that leaves gathered in July or August have deteriorated 25 per cent. by October, and the following summer are only one-quarter as powerful as the fresh leaf. Buhrer[5] found that the fluid extract purchased from various druggists in Germany showed variations in strength up to 400 per cent. Edmunds[6] in this country found that the tincture obtained from indifferent sources varied 350 per cent. in strength.

It is almost incredible that a scientific profession could be content to use a preparation of such inconstant activity, especially when it may be largely remedied. Gottlieb is certainly in the right when he maintains that digitalis preparations should be physiologically standardized, just as are the curative serums. As the tincture deteriorates very little on keeping, there is no reason why a standardized preparation of this sort should not be made. The dried leaves can not be satisfactorily standardized on account of rapid deterioration. In this country we have tinctures shown to be physiologically active and German chemists have prepared carefully titrated tinctures of uniform strength.

All digitalis preparations are decidedly irritating to the gastrointestinal tract. Attempts to overcome this property have been unsuccessful, as the irritative qualities are present in the isolated active principles and especially marked in the most powerful of these, the digitoxin. For this reason it is only fair to assume that a digitalis preparation which is free from irritating qualities is physiologically inert. There can be extracted from digitalis leaves a small amount of a heavy oil which acts as a gastrointestinal irritant. The quantity contained in a dose of digitalis, however, is too minute to be considered as acting in this manner. The same statement holds true in regard to cumulative effect. There are on the market various digitalis preparations which are recommended on account of their non-cumulative action. The only conclusion we can draw is that the statements are false or that the preparation is physiologically inert, as it is well known that the isolated active principles have a cumulative action, this being especially true of the digitoxin. Recently Fraenkel[7] has shown that, contrary to Cloetta's statement, the much-lauded digalen[8] has a cumulative action. The best means at hand to avoid the cumulative effect is to use a preparation of known strength, like the titrated tincture, and then carefully to observe the urinary output and the character and frequency of the pulse. To avoid its irritating action recourse has been made to subcutaneous and more recently to intravenous medication. All preparations, including the digalen, are more or less irritating when given subcutaneously.

In what form shall we administer the digitalis? What shall be the dosage and how long should we continue its use? It is the generally accepted view that better results are obtained from the combined active principles than from any single one. The results from digitoxin, the most powerful of the active principles, is not especially satisfactory, due to its greater vasoconstriction action and the close approximation of the physiologic to the toxic dose (Fraenkel[7]). In Germany, where the plant thrives and where stringent regulations are in force in regard to renewal of the leaves, the powdered leaves and infusions are almost exclusively used. According to Cushney, the infusion contains all the active principles in about the same proportion as the dried leaves; the insoluble digitoxin in the presence of digitonin passes into the watery solution in suspension. When made from the active powdered leaves it is an excellent preparation, somewhat less powerful than the same amount of dried leaves; and for this reason the dose is about twice the amount. Many druggists prepare an infusion by diluting a fluid extract; such a preparation is useless, as the active ingredients are largely precipitated. In this country, on account of the uncertainty in the activity of the leaves, the tincture is the favorite preparation.

In the case of every patient who is given digitalis, the daily secretion of urine and character and frequency of the pulse should be noted. The first evidence of the physiologic action of the drug is an increased secretion of urine, which begins, on an average, forty-eight hours after the treatment is instituted. When this point is reached the dosage of digitalis should be lessened, as this is evidence of the breaking up of the vicious circle; and when once the normal distribution of blood is restored, it will often be maintained with very slight cardiac stimulation, provided the necessary precautions in regard to rest are observed. This smaller dosage may be continued for a considerable period of time without much danger of cumulative effect, even for months or years, as recommended by Fraentzel, Kussmaul and others. This long-continued digitalis therapy is indicated only in exceptional cases. When digitalis is ad-

4. Ztschr. f. klin. Med., 1902, xlvi, 377.
5. Cited by Gottlieb: Verhandl. d. Cong. f. inn. Med., 1901, xix, 90.
6. THE JOURNAL A. M. A., 1907, xlviii, 1744.
7. Arch. f. exper. Path. u. Pharmakol., 1907, lvii, 79.
8. We have recently tested four bottles of digalen, and were unable to obtain any digitalis effect on dogs from doses of 2 c.c. administered intravenously. Two of the samples were tried on frogs' hearts and also failed to show any digitalis action. A decided digitalis effect was obtained on the same dogs with 0.1 c.c. of a tincture of strophanthus.

ministered in the above manner there is little danger of cumulative action. In patients who do not yield to this method of treatment, increased secretion of urine does not occur, and in these cases the drug may be continued for ten days, carefully observing the pulse. The appearance of marked slowing or arrhythmia is evidence of intoxication, and the dosage must be reduced or the drug entirely discontinued.

It is well to bear in mind that very marked intoxication causes increased pulse-frequency; clinically, however, the earlier stage of bradycardia is rarely absent. Too much stress can not be laid on the presence of arrhythmia as an evidence of intoxication. A patient who is taking full doses of digitalis must be seen daily, if we wish to avoid cumulative effects. With a preparation of known strength and with the patient carefully watched, intoxication should never occur. A very moderate slowing of the pulse is desirable, as it means more complete systole and better suction action by prolonging the diastole. Very decided slowing is harmful, as the increased volume of blood expelled at each systole is overshadowed by the infrequency of contraction, so that the amount of blood leaving the heart in a unit of time is reduced. When one preparation of digitalis fails to increase the flow of urine, we may resort to another form. It can not be too strongly emphasized, however, that the results depend on the amount of active digitalis and not on any particular pharmacopeial preparation.

In case of failure with an active preparation administered by mouth, we may resort to intravenous medication, as there is always a possibility of incomplete absorption, especially in patients with a high degree of circulatory disturbance. Kottmann[9] was the first to use digitalis intravenously, employing digalen, a soluble digitoxin. Beginning with 1 c.c., he later used 10 to 15 c.c. at a dose and recommends the larger dosage. The technic is simple, the injection being made into a superficial vein of the arm. The advantages of this method are: Certainty of absorption, promptness of action and absence of gastric irritation. A rise in blood pressure occurs in five minutes, reaches its maximum of from 5 to 30 mm. of mercury in one-half to one hour, the effect continuing about twenty-four hours, then the dose may be repeated. Diuresis begins in a few hours. Occasionally evidence of intoxication, especially of bradycardia, may be observed after a single intravenous dose, but this disappears after a few hours.

Recently others have confirmed Kottmann's results. Mendel[10] did some experimental work with intravenous injections. After using various preparations, he found the digitalone the most satisfactory. In man he used daily injections of 2 c.c. Fraenkel still more recently has used strophanthin intravenously. This is a glucosid obtained from strophanthus. The preparation is now on the market in sealed tubes containing 1 c.c., which represents 1 mg. of the strophanthin. The usual dosage is 0.5 to 1 mg., repeated, if necessary, in twenty-four hours. The action is similar to that of digalen, but Fraenkel thinks that it continues longer. Certain untoward results, as chill, nausea or bradycardia, are occasionally observed after an injection. In addition, we must consider the danger of acute dilatation of the heart from the rather suddenly increased work thrown on it and the possibility of grave toxic symptoms in certain individuals, especially when preparations containing large amounts of digitoxin are used, and, finally, the dangers of arterial degeneration from intravenous medication, such as Fischer[11] has produced in rabbits with digalen. At the present time intravenous medication had better be reserved for those cases in which prompt action is required, where gastric conditions render administration by the mouth impossible or where digitalis by mouth has failed to give results.

Strophanthus.—The only other member of the digitalis group which I shall consider is strophanthus. Its action is practically identical with that of digitalis, but much less powerful. It is a gastrointestinal irritant. The tendency to cumulative effect is much less marked than with digitalis, but still occurs (Fraenkel[12]). Edmunds has found its toxicity about fifty times that of digitalis, and he considers the good effect obtained at times when digitalis has failed as due to the relatively greater dosage. It is chiefly valuable in cases in which a moderate cardiac stimulation is desired, and in ambulatory patients when we fear to use digitalis on account of its greater tendency to cumulative effect. It varies in strength like digitalis, but a titrated tincture may now be obtained.

THE VASOCONSTRICTORS AND VASODILATORS.

The next group to be considered consists of the vasomotor drugs. First, the vasoconstrictors, of which the most important are adrenalin, caffein, camphor and strychnin. These remedies are indicated in cases in which there is vasomotor paresis. The arteries in the great splanchnic reservoirs, with their wonderful capacity to dilate, are engorged with blood, and, while the peripheral vessels suffer from the same paresis, they are usually poorly filled and the patient appears pale, in striking contrast to the cyanosis of cardiac stasis. The contraction of the heart may be normal, but on account of insufficient filling of the ventricle, a very small volume of blood is expelled at each systole. A classical picture of vasomotor paresis is seen in chloral poisoning, shock, and chloroform and ether narcosis. The important experimental work of Romberg and Passler[13] has shown that the heart failure of acute infections, as pneumonia and diphtheria, is in reality a vasomotor paresis. Here, then, is a large field for the vasoconstrictor remedies.

Adrenalin.—The most active member of this group is adrenalin. It is the remedy *par excellence* in shock or heart failure during anesthesia, as it causes a very prompt and marked rise in blood pressure by its action on the nerve endings in the vessel wall. The increase in pressure is so marked that the heart is called on to do an enormously increased work, which may be safely borne by the good heart muscle of the patient in shock, but may lead to acute dilatation and serious consequences if the muscle is diseased, as is often the case in the acute infectious diseases. Again, as the action is exceedingly transitory, five to ten minutes, it is of little value in cases in which prolonged effect is demanded, as in the acute infectious diseases. Adrenalin must be given subcutaneously or intravenously, as its vasomotor action is absent when given by mouth. The dosage is 10 to 15 minims of the 1 to 1,000 solution.

Caffein.—As a vasoconstrictor in the acute infections, caffein holds the first place. Passler demonstrated in animals, when heart failure had been induced by acute

9. Ztschr. f. klin. Med., 1905, lvi, 128.
10. Therap. d. Gegenw., 1905, xlvi, 398.
11. Deutsch. Med. Wchnschr., 1905, xxxi, 105.
12. Verhandl. d. Cong. f. inn. Med., 1906, xxiii, 257.
13. Deutsch. Arch. f. klin. Med., 1899, lxiv, 652.

infection, that caffein caused a more pronounced and prolonged rise in pressure than digitalis. The rise in pressure was maintained about one and one-half hours. Caffein is best given subcutaneously in two to three grain doses, repeated every three to four hours.

Camphor.—Camphor, with practically the same action, is less constant in its effects, probably due to its lessened solubility. Its dosage is the same as of caffein.

Strychnin.—Strychnin has been very extensively used in America as a heart tonic. Its effect on the heart, however, consists entirely of a stimulation of the inhibitory center, leading to slight slowing of the pulse; and even this action is inconstant. The rise in blood pressure observed after its administration is due to stimulation of the vasomotor center, and in animals is only apparent when given in quantities approaching very closely that required to produce general spasm. Crile[14] has shown that the same is true in man, the effect on pressure being very inconstant and apparent only when given in doses sufficient to cause increased nerve excitability as shown by increased reflexes and muscular tone. Cook and Briggs[15] have demonstrated that subcutaneous injections of one-tenth of a grain is necessary to increase pressure. In the doses ordinarily recommended strychnin can not be considered a vasomotor drug. It is only when the dose approximates the toxic one that blood pressure is increased, and, for this reason, it is less valuable than caffein.

The vasodilator remedies occupy a rather uncertain position in cardiovascular therapy, although they are extensively used. With our present knowledge, nitrites and nitroglycerin in physiologic doses are absolutely contraindicated in the heart failure of acute infections. We are dealing here with a vasomotor paresis and a vasodilator would only augment the difficulty.

Alcohol.—The value of alcohol as a cardiac stimulant has long been much disputed. We have been told by the pharmacologist that it has a depressing action on the cardiovascular system, dilatation occurring with fall of pressure. Many clinicians, on the other hand, have maintained that it is a valuable remedy in shock and in the heart failure of acute infections; this divergence of views may be explained if we accept Dixon's[16] recent work on the effect of alcohol. He found that in moderate doses, well diluted, it has little effect on the rate of the normal heart. In animals showing circulatory disturbances, the heart is accelerated, the output increased and the blood pressure raised. Moderate amounts given by mouth produce a dilatation of the peripheral vessels, with constriction of the splanchnics. These experimental results are in accord with clinical experience, and, if confirmed, would secure for alcohol a place in the treatment of shock and those conditions in which we have engorgement of the splanchnics with insufficient filling of the peripheral vessels.

THE VASODILATORS IN HYPERTENSION.

Most frequently the vasodilators are employed to reduce high arterial tension. Two phases of the subject must be considered: first, whether it is advisable to reduce high arterial pressure; second, whether the vasodilators can be relied on to bring this about.

We are, perhaps, too prone to consider hypertension a pathologic condition that must be relieved. There is abundant evidence that general arteriosclerosis does not, as a rule, lead to hypertension, unless, as Hasenfeld[17] and Hirsch[18] have shown, there is involvement of the thoracic aorta or splanchnic vessels. Nephritis is the most frequent cause of very high blood pressure. Many are inclined to believe that in these cases the high pressure is a protective measure, an effort to increase kidney elimination, and the important question to decide in this group of cases is whether lowering pressure modifies elimination through the kidney. Up to the present time investigations on this point have given conflicting results.

Rossbach[19] experimented on patients with interstitial nephritis, administering one-sixtieth grain of nitroglycerin every three hours, and found increased secretion of urine. Kinnicutt[20] and Bourginski[21] have also reported increased urine in nephritis after nitroglycerin. Leech[22] says that neither in animals nor man can it be shown that the nitrites influence the urinary secretion, except in large doses, when the urine is always lessened. He confined his experiments to patients without kidney trouble. Twelve such were given three grains of sodium nitrite three times a day for a period of one week. Seven passed slightly more urine, five less. He also determined the amount of urea and found it unchanged. The most recent and, I think we may say, the most careful work on this subject has been reported by Loeb[23] in Krehl's clinic. Three nephritics were given sufficient nitroglycerin to reduce the pressure 35 to 55 mm. The amount of urine and its freezing point and sodium chlorid content was determined. Loeb found in each case lessened secretion of urine and solids. Straus has also found reduced elimination in nephritis after nitroglycerin.

We are unable to form any definite conclusions from such conflicting results. More careful work on the subject is needed, the patients to be kept under rigid observation as regards diet, liquids ingested and elimination of fluids through skin and bowel. Only by this means can be determined the important question of whether reduction of hypertension modifies renal elimination. Meanwhile, we may safely employ vasodilators in cases of extreme hypertension (over 200 mm. of mercury), as here the danger to both heart and blood vessel must be apparent; also in patients with hypertension who have headaches which are relieved by lowering pressure. Small doses should always be tried, first one one-hundredth grain of nitroglycerin or two grains of sodium nitrite, as Leech has shown almost as marked and prolonged effect is obtained from small amounts. Both remedies act very promptly after administration, the duration of effect from one-half to three hours; the effect of the nitrite being somewhat more prolonged than the nitroglycerin.

When we consider the second phase of this subject, viz., whether hypertension can actually be lessened by the nitrite group, we meet with more conflicting results. These are to be explained in part by the varying activity of the preparation on the market and in part by idiosyncrasies of the individual. S. A. Matthews and I have found that preparations of the alcoholic solution of nitroglycerin and freshly prepared solutions of sodium nitrite, purchased from reliable pharmacists, may be

14. Blood Pressure in Surgery, p. 265.
15. Johns Hopkins Hosp. Rep., 1903, xi, 419.
16. Jour. Physiol., London, 1906-07, xxxv, 346.
17. Deutsch. Arch. f. klin. Med., 1897, lix, 193.
18. Deutsch. Arch. f. klin. Med., 1900, lxix, 503.
19. Berlin. klin. Wchnschr., 1885, xxii, 83.
20. New York Med. Jour., 1886, xliii, 219.
21. Lancet, London, 1885, ii, 733.
22. Brit. Med. Jour., 1893, ii, 6.
23. Deutsch. Arch. f. klin. Med., 1905, lxxv, 577.

totally inert, even when injected intravenously into animals.

It is well known that nitroglycerin in tablet form is very unreliable. Brinz was unable to detect any nitroglycerin in many of these. Not all individuals react in the same way to an active preparation. Hewlett[24] has shown that a rise in pressure, after administering nitroglycerin to man, is almost as frequent as a fall. These same varying results can be demonstrated in animals, as the tracings (Figs. 1 and 2) show.

It is not improbable that many of the failures to lessen pressure with nitroglycerin and the nitrites have been due to the use of inactive preparations. Furthermore, there are some individuals who are able to take very large doses of nitroglycerin with very little effect. Hewlett reports fifteen to thirty drops of the 1 per cent. alcoholic solution with very little, if any, effect. Stewart[25] refers to an instance in which he gave a patient fifty minims of a 10 per cent. solution—equivalent to five grains of pure nitroglycerin—without any great change in pressure. On the other hand, Loeb reports severe collapse after one one-hundred-and-twentieth of a grain. We are unable to explain this diversity of action.

Fig. 1.—Tracing showing usual effect of nitroglycerin on a dog; 3 mg. given intravenously.

Fig. 2.—Tracing showing how nitroglycerin may at times cause a rise in pressure. Dog received 3 mg. on the tongue. The second × shows where alcohol was placed on the tongue in order to prove that the rise was not due to the alcohol in the solution of nitroglycerin.

Mac Nider[26] has shown that a rise in pressure occurs chiefly in old dogs, and that the fall is much more marked in young animals. This probably also holds true in man, as the arteriosclerotic vessel does not respond to stimuli as does the normal. Romberg[27] has demonstrated this disturbance of vasomotor action in patients with vascular changes. He found that the vessels in the arm failed to react to heat, cold, or to the increased demand of the extremity for more blood during muscular activity.

TREATMENT OF ANGINA PECTORIS.

Before leaving the subject of vasodilators, it may be advisable to consider the treatment of angina pectoris. Authorities are agreed that anginal attacks are usually due to disturbance in the blood supply of the heart muscle. Autopsy findings in patients who have suffered from angina show arteriosclerosis of the coronary vessels and numerous areas of focal necrosis in the heart muscle. A very few cases have been reported with normal coronaries, and here the attacks have been ascribed to vasomotor spasm of the coronary vessels.

Since Brunton's recommendation of amyl nitrite and nitroglycerin for the treatment of an attack, those remedies have been generally used. Brunton's observations were based on a single case in which sphygmographic tracings showed a marked *pulsus tardus* during the attack, the pain disappearing and the character of the pulse changing after amyl nitrite. A review of the cases in which pulse observations have been made during an attack shows that Brunton's patient in this respect was exceptional.[28] In the majority of patients little change has been observed in the tension of the pulse during an attack, and this conforms to what occurs in animals after ligation of a coronary artery. Clinical experience has shown that a rather small percentage of cases receive prompt relief with amyl nitrite or nitroglycerin—probably only those cases in which vascular spasm plays a rôle. In the group of cases in which the attack is due to obstruction by embolus or thrombus, two therapeutic problems arise: Shall we try to raise blood pressure and thus force blood through the anastomosing[29] vessels to the anemic area, lessening the amount of infraction, and by doing this throwing increased work on a weakened ventricle, or shall we attempt to lower pressure, relieving the heart work, meanwhile increasing possibly the area in which necrosis may occur?

This problem has received our attention during the past year. When the coronary arteries of a dog are ligated just sufficiently to cause slightly disturbed heart action, the use of adrenalin, while causing a momentary rise in pressure, is followed by dilatation of the left ventricle and death. If we use digitalis instead of adrenalin, the contraction of the ventricle becomes more complete and a return to normal occurs, and then additional branches may be ligated without material disturbance. If nitroglycerin be used in place of the adrenalin or digitalis, there is no improvement in the heart's action, death occurring as in the untreated animals. In other words, a heart under the influence of digitalis allows of much more extensive ligation of the coronary vessels

24. Jour. Med. Research, Boston, 1906, xv, 383.
25. THE JOURNAL A. M. A., 1905, xliv, 1676.
26. Am. Jour. Med. Sc., 1908, cxxxv, 99.
27. Verhandl. d. Cong. f. inn. Med., 1904, xxi, 60.
28. Fraenkel: Verhandl. d. Cong. f. inn. Med., 1891, x, 274.
29. Spaltholz and Hirsch: Deutsch. Med. Wchnschr., 1907, xxxiii, 700.

without serious consequences than a heart under the influence of vasodilators. A more complete report on this work is to be published later.

These results are suggestive at least of the fact that the digitalis group may be indicated in attacks of angina pectoris. In order to obtain the promptness of action required in these cases, the drug must be given intravenously or subcutaneously.

TREATMENT OF ARTERIOSCLEROSIS.

In the medicinal treatment of arteriosclerosis, only one drug has any claims to efficiency. Clinicians quite uniformly believe that alleviation of symptoms, due to arteriosclerosis, follow prolonged use of the iodids. Various symptoms, as angina pectoris, dyspnea and vertigo become less marked after the continued use of 5 to 10 grains of sodium iodid three times a day. Huchard believed that its good effects were due to its vasodilator action. It has been shown, however, by Boehm and Berg[30] and Stockman and Chartens[31] that iodid does not lower blood pressure. There is no evidence that it has a specific effect on the arterial changes, except possibly those of syphilitic origin. The beneficial effects have been ascribed to its power of lessening the viscosity of the blood. Ottfried Müller[32] has shown when a patient had received a total of about two hundred grains in daily doses of twenty grains, decidedly lessened viscosity of the blood could be observed. As long as the iodids were continued this lessened viscosity was evident. As a result of this increased fluidity of the blood, less work is required by the heart in forcing it through the narrowed vessels. Determann,[33] an experienced worker in this field, has been unable to confirm Müller's findings, thus leaving the question still unsettled.

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THE DEVELOPMENT OF THE INFANTILE STOMACH.*

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In caring for an infant we should ever keep in mind the desired ultimate result, viz., the development of a perfect adult with a normal adult stomach. The kind of a stomach possessed by an adult of 25 years depends considerably on how he was fed during the first two years of his life. The stomach at birth is little more than a straight tube continuous with the esophagus above and the duodenum below, and hangs nearly vertical in the abdomen. It is elastic and easily distended, and is in contact with, and more or less pressed on by, the other abdominal viscera and the diaphragm. There is a slight fulness on one side, showing where the greater curvature and the fundus will be, and if it is distended it assumes a shape approaching that of the adult stomach. We do not know accurately its capacity. The means that have been used to measure the infantile stomach are faulty.

The plan of weighing the infant before and after nursing has these objections, viz., (1) we are never sure the stomach is entirely empty when the infant starts to nurse; (2) we do not know how full it is when he stops; (3) at the first weighing there may be gas, lighter than air, in the stomach or intestine which is expelled during the nursing; (4) gas lighter than air may be formed in the stomach before the second weighing; (5) some of the breast-milk may escape on the infant's clothing, or into the intestine, and (6) we are never sure that it is a normal stomach. The plan of removing the stomach and filling it with liquid is probably still more inexact. The stomach is in an unnatural position; it is not under the natural pressure of the surrounding organs and the abdominal wall, in a closed cavity; it is easily distended, and we do not know how much to distend it; it may be altered by the disease that killed the baby.

I wish to suggest the following plan as overcoming some of these objections—a plan that I have not had an opportunity to put into practice. Let the subject be a baby that has died very suddenly, from accident or otherwise; make as small an incision in the abdominal wall as will do; ascertain that the stomach is empty; ligate both ends of the stomach with as little disturbance of the organ as possible; then through a small slit fill the stomach with modified milk, at a temperature of 100 F., using a spoon to avoid hydrostatic pressure. This should be done as soon after death as possible.

It is not necessary, however, to know the exact capacity of the infantile stomach as a guide to proper feeding. The fact that we do know that capacity approximately has led to what I believe to be grave errors in infant feeding, especially where the infant is given artificial food. This knowledge, together with the approximate knowledge of how long it takes the infant stomach to digest food, has led to the giving of a certain fixed quantity of food at certain regular intervals, which I believe to be wrong.

The problem is, how to develop this simple tube into the complex organ that it should be in later life. The adult stomach is essentially a muscle lined with a secreting membrane, and covered with a serous membrane. It is, or should be, highly elastic, and have strong powers of contraction. These functions are far more apt to be impaired than its secreting functions. One of our main objects, therefore, in feeding an infant should be to develop a stomach with good contracting powers and a strong muscle. We all know that the best way to make a muscle grow strong is to use it. If a muscle never does any work it soon loses the power to work.

What happens under the plan of so-called "scientific" feeding, i.e., the giving of a certain fixed quantity of food at certain regular intervals? In the first place, the stomach is never distended with food, and in consequence the muscle is never adequately stretched: i.e., properly exercised. Second, when the regular feeding time comes again there may be, and often is, some of the last feeding still in the stomach. This residual food is often in a state of mild fermentation. When the new food is added to it the fermentation is increased, giving rise to symptoms of indigestion, sometimes to diarrhea. Third, the regular feeding time often comes at a moment when the infant should not be disturbed; he may be asleep, or enjoying a quiet hour in the open air, and is better left alone. Fourth, frequent feeding, with continuous stimulation, or a "teasing" of the stomach, results in an atonic condition, and dilatation of the stomach. A nerve or a muscle, when asked too frequently to functionate, loses the power to respond to a

30. Arch. f. exper. Path. u. Pharmakol., v.
31. Brit. Med. Jour., 1901, 1520.
32. Müller and Inada: Deutsch. med. Wchnschr., 1904, xxx, 1751.
33. Deutsch. med. Wchnschr., 1908, xxxiv, 871.

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908

normal stimulus. Fifth, it is a well known fact that too frequent nursing causes the mother to secrete a concentrated milk which is not easily digested by the infant.

When scientific infant feeding was introduced I adopted it. It proved to be much better than the older way of feeding the baby a little, just enough to quiet him, every time he cried. Some of my babies did well on it, others did not do so well. After a while I found out that those did the best where the mother or nurse did not quite live up to my carefully worded instructions. They refused to wake the baby to feed it, and when the baby was quiet and happy, they would allow a much longer interval to elapse than I had specified. Of course, this was rank heresy and insubordination, but these were the babies that did the best. Finally, I formulated my present plan of feeding normal infants, which I have called "The Natural Method." Since adopting this plan I have had uniform success, unless something entirely extraneous to feeding made the infant ill.

My directions are to feed the baby until he is full, without any regard to the amount taken. Not to allow him to fall asleep too soon, but to arouse him, shake him up, and induce him to go on feeding until he is surely full, and, perhaps, runs over. This stretches the stomach to its greatest natural capacity, and gives the muscle the exercise it needs to develop it. Then let the infant sleep, in the most favorable surroundings, as long as he will. A baby will sleep longer out of doors than in the house; longer in a well ventilated room, than in a close room; longer in a cold room, than in a warm room. It is important that this sleep should be as long as possible.

When he wakes do not feed him at once, wait until he is hungry. It is unnatural, unphysiologic and unscientific to feed an infant when he is not hungry, or to feed him simply because he is thirsty or fretful. Hunger is the only excuse for feeding a normal infant. If fretful, give him water, fresh air, less clothing; soothe him, amuse him, do any one of a thousand things to keep him quiet and happy before resorting to food. Never mind how long it is since the last feeding; watch the baby, not the clock.

Finally, let him cry. This is the hardest thing of all to get done. Let the baby cry. The mother suffers, the people around are annoyed, but it does the baby great good. It is the best, the most vigorous, the most natural exercise he gets, and it is best taken out of doors. This exercise of crying in some way prepares the stomach for its next load of food. Since the last feeding the stomach has had full time to get empty; it has had time to contract and resume its natural tone; it has had time to rest. When the crying threatens to change from the natural cry of hunger to a hysterical or sickly wail, then feed the baby, and be sure to feed him full.

The intervals between the feedings will be irregular. During the first month they will sometimes be as short as two hours, sometimes as long as four hours in the day, and six or even eight in the night. The number of feedings for the first three weeks will average for the 24 hours generally seven, sometimes eight, rarely nine.

The general hygienic treatment of an infant is inseparably connected with the success or failure of any method of feeding. Anything that tends to develop the general musculature will also help the stomach muscle to grow. Fresh air, cold air, flowing air (as Dr. Northrup calls it), the air bath, the cool water bath, light clothing, absence of coddling, and the exercise of crying, all these things help the infant to digest his food and help to properly develop the stomach.

Under this plan of feeding and general treatment it is often astonishing to find how easy it is to modify the milk to suit the baby. He soon gets so that he can successfully handle any modification that comes at all near being what is considered the proper one for his age. If an infant is fed in this way, is kept out of doors, and is not overclothed, he soon develops digestive powers that, to put it mildly, are surprising.

The foundation on which the natural method of feeding rests, is the fact that a healthy infant can not always digest the same amount of the same kind of food in the same number of minutes. How much he can digest and how quickly he can digest it depends on how much he has used up, how much he has earned since the last feeding. A baby earns his food by the exercise of crying, by using his muscles in various ways, by exposure to fresh air, cold air, and cool water, and he can properly handle only the amount of food he has earned. Dr. Rotch has well said, "it is always better to err on the side of giving too little food than too much." This is entirely true when applied to the 24 hours, but it is impossible to give an infant too much food at one feeding, provided the feedings are far enough apart.

ABSTRACT OF DISCUSSION.

DR. I. A. ABT, Chicago: I agree with Dr. English in several points, but rather disagree with the main argument. That we often overfeed a baby and often feed it too frequently, I think, is undoubtedly true. But it will take a long time and much clinical work to prove the fallacy of all that we have learned in the matter of infant feeding and to make us willing to go away back to antiquity and disregard all the facts that we have accumulated in our study at the bedside. We can not offhand reject these observations. One of the first questions a mother asks the physician is: "How much shall I feed the baby?" And we must have some idea what to tell her. It is true that babies vary widely as to stomach capacity. It depends on the age, the development of the baby, and the individual capacity of the stomach. But to adopt a new system that entirely disregards our accumulated knowledge of the subject is like going back and beginning all over again. Much more proof and much more clinical evidence should be brought forward before we adopt the plan that Dr. English proposes.

DR. JOHN LOVETT MORSE, Boston: I disagree with much in Dr. English's paper. It seems to me that for all practical purposes we do know now the capacity of the infant's stomach at various ages, and I doubt if Dr. English's method will give any better results than the methods we now employ. Dr. English spoke of developing the muscle of the stomach. I think that the same rules should apply in the development of the muscle of the stomach as in the development of other muscles. Overfilling it, filling it to overflowing and thus stretching it, overstrains it and does harm rather than good. If a baby is at the breast it may fill the stomach till it runs over without doing it any especial harm, but if it is fed on artificial food it can not be safely given more than it needs. Experiments have shown that if a proper food is given a baby's stomach is empty after two hours. I do not see, therefore, why we should necessarily wait longer before feeding again. I do not mean by this that I feed babies every two hours, but merely that there is no contraindication to doing so. To adopt the method described by Dr. English is to go back to the dark ages—to give up our present standards and to go back to the old methods that have no scientific basis.

DR. ABRAHAM JACOBI, New York: I know that two hours is the time that has generally been set down as the interval between the feedings in newly born infants. But about twenty-five years ago I made it my business to empty the stomachs of a large number of babies for the purpose of finding out how long mother's milk would remain in the baby's

stomach. After two hours I always found some material in the stomach. I concluded, therefore, that if the stomach was expected to be empty we should have to wait longer than two hours. Since that time I have made it a rule to wait two and a half hours or longer.

DR. CLARENDON RUTHERFORD, Chicago: I agree with Dr. Jacobi in regard to the length of time in infant feeding. In my experience of twenty-seven years I have thought that the interval should be even longer than two and a half hours, although it all depends on the capacity of the individual infant and the length of time it takes to feed it. When a baby is a rapid feeder it should not nurse as long as the one that feeds more slowly. I do not think that any definite rule can be laid down as to how long a baby should nurse. The mother soon learns from observation. I think an interval of three hours better for the mother than an interval of an hour and a half or two hours. When a mother nurses her baby every hour and a half she soon becomes a worn-out, nervous, debilitated and bedraggled old woman. For this reason it is better for the baby as well as the mother that the intervals should be longer after the first few weeks.

DR. CHARLES DOUGLAS, Detroit: From the discussion it seems to me that perhaps a little more latitude should be given in regard to the intervals between the feedings. Of course, we must consider this subject from two points of view: whether the baby is being nursed or is being given artificial food. When the food agrees with the nursing baby very little harm can be done even if it is fed frequently. The intervals of feeding simply depend on the child's ability to dispose properly of the amount of food taken. My rule has been to have a fixed time for feeding when the work is not being done properly and, if the child is artificially fed, to vary the amount of each food until I get the correct stool. The character of the stool is a better means of determining whether the food is being digested properly than is the child's crying. We all know that when we are suffering from indigestion we often have sensations of hunger, or of distress that we mistake for hunger, and the infant suffers in the same way, causing it to cry incessantly. Therefore, if you have a correct stool, feed the child when it is hungry. If the stool is not a correct one, have a fixed time for feeding and change the proportions of fat proteid and sugar till you get the correct stool.

DR. D. E. ENGLISH, Millburn, N. J.: This is not going backward to the old, careless method of feeding; it is going forward. Because it is something different from what we are doing now it is not necessarily going backward. When a mother asks me how often to feed the baby my instructions are entirely definite, that is, not to feed the baby until she is forced to; not until nothing else will quiet it; not until its stomach is empty, and it is really hungry. Dr. Morse says that a baby should be fed every two hours; Dr. Allen says every two and one-half hours; Dr. Jacobi says every three hours. The baby knows better than any of us, and we should learn to properly interpret its language, its actions and its needs. I entirely agree with Dr. Douglas that the stools are an excellent guide, not so much, however, in regard to the frequency of feeding, as to the quality of the food.

THE PREPHYSICAL SIGNS OF TUBERCULOSIS IN CHILDREN.*

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It seems a task of supererogation for me to indicate some of the early signs of tuberculosis. It is at times a contagious disease, yet its incubating period has not been clearly defined. We may refer to latent tuberculosis, active tuberculosis and all the various local types of tuberculosis, yet there undoubtedly was a period before tuberculous implantation occurred when the system was most susceptible, though not infected.

We have educated the people as to the laws of incubation and infection of contagious diseases, especially the laws governing the exanthemata, and yet the most extensively destructive enemy of mankind remains to be classified. It has frequently occurred to me that we should attempt to establish some early landmarks. No disease is so prevalent, nor has any disease so extensive a literature as tuberculosis. Unfortunately, the incubating period is uncertain. This will probably remain so, and is due to the various types of expression of the tuberculous process in young children.

Much has been written about the tuberculous physiognomy in the growing child, one class having fine hair, long eyelashes, a large eye, clear conjunctiva, transparent skin, the nervous temperament, intellectually precocious; in another class, the very antithesis is true; the fleshy eyelids, dull, muddy conjunctiva, apathetic face, thick skin and generally the dull, expressionless face of the strumous—as the old term designates it—the scrofulous child.

In this type of predisposed child the features are large, the lips full, the alæ of the nose thick, the nostrils expanded, giving the nose a fleshy, broad appearance. The tongue is frequently large and restless, the ends of the long bones are full, and the shafts thick. The fingers may be clubbed; the abdomen distended with dilated stomach or colon, or perhaps both. The hair and nails grow rapidly, the skin is generally rough and scaly. Commonly there is an unusual development of hair, which is seen as a thick down on the forehead, cheeks, ears, shoulders and down the spine. There is excess of secretion from the nose, the skin about the lips often cracks and becomes inflamed; the eyes many times appear weak and expressionless, even when no external inflammation exists. There is a great tendency to ophthalmia, catarrhs and skin rashes.

Children of this type, when they become infected with some acute illness, are very ill without expressing the usual phenomena of illness, similar to the highly nervous child, because in him all the reflexes are diminished. Thus a pneumonia may be ushered in without a chill or convulsion, and only the recognition of temperature chart and a physical examination will reveal the serious nature of the sickness. In this way, I believe, this type of child frequently secures an early tuberculous implantation. In both types of children, adenitis is a frequent inheritance from measles and whooping-cough, and unless we persevere in our treatment, lymph node involvement will become extensive, and the anterior mediastinal glands will be reached. Involvement of the glands in the mesentery and those behind the perioteneum follows, passes thence through the diaphragm to the posterior mediastinal and bronchial glands, and thus eventually the lungs are reached.

An early implication of the mediastinum is more frequent than clinicians are willing to admit. It is likely to occur during any of the eruptive diseases, where superficial lymph nodes are involved. A recognition of this fact affords a warning of approaching danger, and gives the physician an opportunity to arrest the progress of the disease by prompt attention.

Some years ago, while I was spending a few days with Eustace Smith, at Shadwell, London, he demonstrated to me what I feel assured is a much neglected procedure in early diagnosis of tuberculous children. The signs of

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pressure on the veins, the dullness over the first bone of the sternum extending to a variable distance on each side, and the paroxysmal cough, point conclusively to caseation of the bronchial glands. The peculiarity of the cough is, indeed, often the first symptom leading us to suspect the nature of the disease. This is distinguished from the cough of pertussis, which it so much resembles, by the absence of crowing and of the terminal vomiting or glary expectoration. Such a cough, if unaccompanied by the auscultatory signs of pulmonary disease, is very distinctive of enlarged bronchial glands. The absence of these auscultatory signs is very important in the diagnosis, as a morning cough of a very similar character is occasionally heard in cases of fibroid induration with dilatation of the bronchi, and is sometimes also characteristic of catarrhal pneumonia.

If in the intervals of the fits of coughing there is anything approaching to an asthmatic seizure or the slightest percussion-dullness at the top of the sternum, little doubt can remain as to the nature of the disease. Alteration in the quality of the voice often accompanies the characteristic cough. If there is doubt in any case, the occurrence of signs of venous pressure at once changes our suspicions to certainty.

Well-marked pressure signs are not, however, present until the swelling of the glands has become considerable. At an earlier period, and before the enlargement has become sufficiently great to cause symptoms so obvious, the diagnosis of the lesion is far from easy, as the symptoms by which it is accompanied are few and obscure.

At this time much assistance can be gained from the following experiment. If the child be made to bend back the head, so that his face becomes almost horizontal, and the eyes look straight upward at the ceiling above him, a venous hum, varying in intensity according to the size and position of the diseased glands, is heard with the stethoscope placed on the upper bone of the sternum. As the chin is now slowly depressed, the hum becomes less loudly audible, and ceases shortly before the head reaches its ordinary position.

The explanation of this phenomenon appears to be that the bending back of the head tilts forward the lower end of the trachea, which carries with it the glands lying in its bifurcation, and the left innominate vein, as it passes behind the first bone of the sternum, is compressed between the enlarged glands and the bone. In cases where this sign has been noticed, there has often been some slight dullness over the manubrium, leading one to suspect the existence of enlargement of the glands; and the occurrence of the hum thus produced is considered to be evidence confirmatory of his suspicion.

The experiment does not succeed in cases of flat chest when there is no reason to suspect glandular enlargement, nor can the hum be produced by the thymus gland in a healthy child. This gland is immediately behind the sternum in front of the great vessels; enlarged bronchial glands lie behind the vessels in the bifurcation of the trachea. A swelling in front of the vessels does not appear to set up pressure on the veins when the head is bent back in the position described. In no case has the characteristic hum been produced, except where there was reason from other symptoms to suspect the presence of bronchial glandular enlargement.

The early diagnosis of tuberculous mesenteric glands is a matter of great difficulty. It is possible that glandular enlargement may be present, but it is unusual to recognize it until other symptoms occur which may lessen the value of the findings. Thus anemia, loss of flesh, and some gastric irritation will often precede any mesenteric deposit.

Some years ago, while studying the character of the rectal mucus, I found the flora very interesting, and, quite oblivious of the fact that I might find tubercle bacilli, I was surprised on one occasion to encounter them constantly; and this occurred in a case where tuberculosis was not suspected. On palpating the abdomen I was rewarded by finding a small chain of glands following the vertebral column.

Subsequent study along these lines has given me the impression that enlarged glands may be found in young children quite frequently and in a quiescent state; they may have existed thus for years without any constitutional expression.

To study the abdominal glands in a child I place him in the knee-chest position or on the back with the knees well flexed and the head well curved on the chest. When the glands are situated in the groin or under the arm, superficially there has occurred usually a massing of the glands and with it some decided constitutional toxemia which can no longer be regarded as prephysical signs.

The purpose of this brief paper will be accomplished when I have called your attention to the frequency of the enlarged mediastinal glands, and the occasional findings of the tubercle bacillus in the rectal mucus of unsuspected tuberculosis subjects.

CONCLUSIONS.

1. In dealing with tuberculosis in children we must recognize an infectious disease that has no well defined incubating period.

2. Latent tuberculosis may continue throughout the life of the child.

3. We must never forget the protean types of expression of tuberculosis during childhood.

4. Thorough control of tuberculosis can only come when the public is taught that ill health, from whatever cause, is an open invitation to its infection.

5. Anemia, loss of weight, with gastrointestinal catarrh, are more certain early symptoms.

ABSTRACT OF DISCUSSION.

DR. ARTHUR W. FAIRBANKS, Boston: I have demonstrated a number of times that the enlarged glands produce dulness over the sternum, but in infants it is impossible to distinguish between these enlarged glands and the large thymus. However, if the other glands are also enlarged, the chances are that the dulness is due not to the thymus, but to the enlargement of the glands in this region.

DR. R. B. GILBERT, Louisville: The thymus gland is much more important than most of us apprehend. I demonstrated the other day a thymus gland extending an inch or more beyond the sternum on either side and down to the third costosternal junction. The thymus gland increases up to two or two and a half years of age. From that period it gradually gets smaller until about five years. It is decidedly small then, and does not cut so much figure in the examination. I think that possibly some of the modification of the venous hum noted on forced retraction of the head is dependent somewhat on the pressure of this thymus gland. I believe that you can find the tubercle bacillus in the feces long before there are any physical signs in the thorax or enlargement of the bronchial or mesenteric glands. A recent report from the Department of Agriculture, Washington, states that a number of healthy-looking cows, having no other evidence of tuberculosis, were found to have tubercle bacilli in the feces. Profuse night sweats constitute another symptom on

which we have not laid enough stress, and that, together with the other symptoms, would make the diagnosis not difficult.

DR. C. G. KERLEY, New York: During the past year or fifteen months practically all the babies admitted to the Babies' Hospital have been subjected to one of the newer methods of making the tuberculin tests. These observations have been interesting in many ways and have brought out a type of tuberculous infection in children in whom it was never before suspected. The child with a persistent bronchitis would respond to the vaccination or one of the other tests. Then a search would be made for enlarged glands or other signs. Repeatedly in these cases the tubercle bacilli have been found by putting a tube in the child's throat and forcing the child to cough on it. Dr. L. Emmet Holt, before the last meeting of the American Pediatric Society, stated that this was a new type of manifestation of tuberculosis which had not previously been thought of.

DR. ALFRED FRIEDLANDER, Cincinnati: These glands can be demonstrated, though it is doubtless true that an enlarged thymus may cause some difficulty in the diagnosis. One sign of particular value to which I called attention in this section several years ago is the presence of a change in the blood, namely, a distinct lymphocytosis. The lymphocytosis may increase up to 70 per cent., instead of 22 per cent. This relative increase in the lymphocytes is accompanied by a corresponding diminution in the polymorphonuclears. Another diagnostic aid is afforded by the Roentgen ray, which shows a distinct shadow when the glands are enlarged.

DR. J. W. VAN DERSLICE, Chicago: I am under obligations to Dr. Hollopeter for bringing up this question of the enlargement of the bronchial glands as a prephysical aid in the diagnosis of tuberculosis. I think the criticism not well made that it is difficult or impossible to make such a diagnosis because of the rather constant excursion of the outline of the thymus during certain years of life. It certainly is feasible for one to take cognizance of this gland, knowing that it reaches its maximum size at the second year, then gradually atrophies and completely disappears about the sixth year. That Dr. Hollopeter's statements are well founded and that they are of constant clinical use I have frequently demonstrated in my own clinic.

DR. W. J. BUTLER, Chicago: I suppose that nothing offers greater difficulties in diagnosis than enlarged bronchial glands, and when we do diagnose them we are seldom in a position to confirm our opinion. The points brought out by Dr. Hollopeter are valuable. Dr. Friedlander has referred to the use of the *x*-ray, by which means enlarged bronchial glands may be demonstrated. I have also used the ophthalmic reaction frequently and I have been surprised to notice how often this reaction was negative in cases with enlargement of the cervical glands. Attention might be directed to the conformation of the thorax as a predisposing factor to the development of tuberculosis. Congenitally short first ribs cause a stenosis of the upper thorax aperture and flattening of upper part of chest, changes which we recognize as habitus phthisicus.

DR. J. F. HULTGEN, Chicago: The subject of the pretuberculous stage of tuberculosis was first made a subject of discussion several years ago. The question of recognizing the pretuberculous stage in young children or adults resolves itself into the question of recognizing an adenitis and lymphangitis. Syphilis excluded, an adenitis indicates almost certain tuberculosis. Tuberculosis causes a lymphangitis. It stimulates certain parts of the lymphatic system and, as one of the speakers has already said, it does produce a marked lymphocytosis. A great deal of light may be thrown on this problem by repeated examinations of the blood, continued over a considerable length of time. You will find a condition resembling chlorosis or chloranemia. It is a secondary anemia, having the same blood findings as any other anemia. I have found in twenty-eight incipient cases a differential blood count like this. (I excluded carefully the possibility of chlorosis in every case.) There was a differential count of 55 polynuclears, 39 small mononuclears, 3.5 large mononuclears, 3.4 eosinophiles. I have had a hard time finding twenty-eight cases of clinical chlorosis, and the blood findings are exactly the same. There is, then, hematologically, no difference in these cases. In these pretuberculous cases the total white-blood count was 5,000 as an average. In chlorosis cases it was 6,010. When you consider that the normal differential count is about 66 polynuclears, 28 mononuclears, 2.5 large mononuclears, 3.5 eosinophiles, you will see how the polynuclears lose. That means a stimulation of the lymphatic system. I have made something like a thousand examinations on about five hundred cases of suspected tuberculosis and I find that this comes more nearly to the truth than anything I have seen in the text-books. This is rather difficult work. You have to examine a case every two weeks for at least six weeks, two months or more. If, together with this blood picture, the child has a temperature of 99 or 100, if it is losing in weight and will not gain in spite of all you can do for it, and if, in addition to all this, there is a history of tuberculosis in the family, I think that you are justified in making a diagnosis of early tuberculosis. I think that you should use the blood examination in doubtful cases and, once for all, discard the use of the term chlorosis. I think that tuberculosis is a disease contracted in childhood, and that it travels through the lymphatics, lodges mostly in the glands, and thus produces at the critical periods of life the blood findings usually assigned to chlorosis.

REACTIONS OF THE LABYRINTH AND THEIR SIGNIFICANCE IN THE DIAGNOSIS OF SUPPURATIVE LABYRINTHITIS.*

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Although, since the time of Purkinje, vertigo from turning was known, and since the time of Florens, vertigo from syringing the ear with cold water has been frequently observed, it remained for Mach, Breuer and Ewald to note that vertigo is associated with nystagmus in man and with head rolling and nystagmus in animals.

Since then, more exact observations by Alexander, by Kreidl, Kubo, Barany and Lange have led to important conclusions regarding the physiology of the semicircular canals, and shown how an overbalance of irritations of the semicircular canals of one side will produce nystagmus in man.

Later, Stein, Krotoschiner, Panse and Mackenzie have further investigated the functions of the semicircular canals. Stein and Krotoschiner made use largely of the goniometer. Alexander and Mackenzie experimented with the gaits of patients, forward, backward and to the side; and for vertical movements by the aid of Alexander's goniometer. In this way were examined the straight movements in the three directions of space.[1] All who have investigated cases of destroyed vestibular apparatus have uniformly found disturbances of equilibrium.

Prior to 1905 this subject of the inner ear, especially the static labyrinth, was one of scientific interest, rather than of practical value. The practical application of this knowledge for diagnostic purposes has since then been materially developed by Alexander, Neumann, Barany, Mackenzie and others.

At present, it is possible to make an absolute diagnosis of a complete destruction of the labyrinth from acute suppurative labyrinthitis. This fact is especially important not only to otologists, but also to the entire profession, since not a few cases of chronic middle-ear suppuration present themselves complicated with acute

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1. Examination of Deaf Mutes, Arch. Phys.

suppuration of the inner ear, which not infrequently is responsible for meningitis and death.

In view of this fact, it is important that we should have a good working knowledge of the symptoms and signs of acute suppuration of the labyrinth.

It is my pleasure at this time, therefore, to present a brief outline of these signs and symptoms, in their relative diagnostic importance:

I. TOTAL DEAFNESS OF SUDDEN ONSET.

This symptom is important, but at times has led to some uncertainties since we have as yet no absolute positive test for one-sided deafness, notwithstanding the use of the 2 meter speaking tube and the small a′ tuning fork of Bezold.

The great difficulty in all tests for one-sided deafness is the complete exclusion of hearing by the ear. The 2 meter speaking tube was originally devised for this purpose. However, it is well known that even whispered speech through this tube is conveyed to the other ear by means of bone conduction. The Bezold's small a′ tuning fork is also used to test for absolute deafness on one side, but Barany has recently demonstrated that this test also is unreliable and that patients totally deaf on one side—indeed, in patients who had had one labyrinth removed—hear this fork apparently by the deaf ear, but it is heard really by the good ear through either air or bone conduction or both. Furthermore, Barany has constructed a special apparatus with which one can definitely determine total deafness on one side. It consists of a hollow conical speculum traversed by two tubes—one for the inflow and the other for the outflow of water—and a third tube for forcing air with the water. By means of this apparatus great noises are produced in the good ear, whereby, if the opposite ear is totally deaf, the patient can not hear the loudest shouted speech, or even a trumpet call, notwithstanding he had seemingly heard whispered speech through the 2 meter speaking tube and the Bezold's small a′ fork. One might suppose the great noises made in the good ear would prevent the patient from hearing low or even loud sounds in the other ear, but when this experiment is made on persons with normal hearing or on persons who can just hear a conversational voice in the ear, it does not interfere with the hearing in the opposite ear. In a person with normal hearing when these noises are made in both ears simultaneously absolute deafness is produced for the time being.

II. INTENSE VERTIGO OF SUDDEN ONSET.

In this condition, which lasts on an average from two to five days, the vertigo may be of such severity as to cause the patient to hold on to objects to prevent falling and may be associated with nausea and vomiting.

III. ROTARY NYSTAGMUS TO THE SOUND SIDE.

This symptom is important especially when combined with deafness and vertigo. It is best observed by having the patient look straight ahead and by elevating his upper lid with the finger. This nystagmus is marked and is observed in all positions of the bulb and lasts as a rule for a few weeks, when it gradually disappears.

IV. THE NON-IRRITABILITY OF THE LABYRINTH TO THERMAL CHANGES (CALORIC TEST).

It is an established fact that the syringing of the ear with water of lower temperature than that of the body will produce in normal people a rotatory nystagmus to the opposite side, whereas syringing the normal ear with water at a temperature of ten or more degrees higher than that of the body will produce a rotatory nystagmus to the same side. Therefore, when we have a patient with the above-mentioned symptoms and signs who does not respond to these caloric tests we have a most important negative sign of acute destruction of the labyrinth.

V. REACTIONS BY TURNING.

As given by Barany normal people, after being turned ten times on the revolving chair to one side with the head bent forward 90 degrees, will show rotatory nystagmus to the opposite side, lasting on the average from 18 to 25 seconds—so-called after-nystagmus.

In acute and latent cases of one-sided labyrinth destruction we find the duration of the after-nystagmus to the diseased side diminished to 8 seconds or less, approximately one-half of the duration of normal after-nystagmus. This problem has been carefully worked out by Barany.[2]

VI. GALVANIC REACTION.

This test is made as follows: By applying the cathode to the ear directly in front of the tragus and having the patient hold the anode in his hand a rotatory nystagmus will occur to the same side with a current of from 2 to 7 milliamperes; but when the anode is applied to the ear and the cathode is in the hand, a rotatory nystagmus occurs to the opposite side with a current of similar strength.

In cases of labyrinth destruction a nystagmus reaction requires with the cathode to the diseased ear a current of from 10 to 16 milliamperes, whereas from the normal side we obtain with the cathode a reaction from 2 to 6 milliamperes. These tests are quantitative tests whereas the caloric is a qualitative test.[3]

VII. DISTURBANCES OF EQUILIBRIUM.

In acute cases of one-sided labyrinth suppuration, as has been pointed out by Alexander, Barany and others, there are marked and typical disturbances of equilibrium, the patient tending to fall to the diseased side. This symptom gradually diminishes after the first few days, but never entirely disappears.[4] These disturbances of equilibrium occur especially in walking forward and backward with the eyes closed. The patients show swaying movements and often a broad gait.

In cases of acute labyrinth suppuration there are always more or less symptoms of meningitis, such as fever, diffuse headaches, sensitiveness to percussion and stiffness in the back of the neck, and not infrequently more or less choked disc may be found.

TREATMENT: OPERATION.

In cases of acute labyrinth suppuration it is better and safer to remove the labyrinth at the time of the radical operation, although the facial canal remains intact, for it is in just such cases in which the radical operation is done and the labyrinth is not removed that after from 24 to 48 hours suppurative meningitis and death occur.

The best method of operation is to make wide exposures of the sinus and meninges, uniting the middle

2. Physiologie und Pathologie des Bogengangapparates beim Menschen.
3. For fuller details of these tests see Mackenzie, Archiv. Otol., 1908.
4. Alexander and Mackenzie: Experimente an Taubstummen, Archiv. Phys.

and posterior fossæ as advised and practiced by Alexander, who also incises the dura in both fossæ in order to secure the greatest possible drainage.

In conclusion, it is urgently advised that in cases of suppurative labyrinthitis it is far better to do no operation than to make the radical operation without at the same time operating on the labyrinth, since the radical operation alone exaggerates the pathologic conditions in the labyrinth and thereby enhances the danger of meningitis.

I wish to thank Dr. Alexander, in charge of the ear department of the *Allgemeine Poliklinik* in Vienna, for the instruction received from him and his kindness to me in giving me a voluntary assistantship in his clinic with full opportunity to examine and treat cases.

I wish furthermore to thank Dr. G. W. Mackenzie for the help he gave me while working in the same clinic. I had opportunity to assist him in his research work, especially in developing newer methods for galvanic examinations of the inner ear. Moreover, I had daily opportunity to test and to perfect all methods relating to the examination of the inner ear. These examinations had to do especially with the reactions of the labyrinth and their significance in the diagnosis of labyrinthitis, fistula, etc.

ABSTRACT OF DISCUSSION.

DR. J. HOLINGER, Chicago: I understood Dr. Davis to say that the Bezold test for one-sided deafness was made with the small a′ fork. Bezold says that if an a′ is not heard in an ear it is surely deaf, but he does not say that this is the only and the crucial test for one-sided deafness. He always uses the lowest tuning forks, which are much more important for this test because their sound does not carry far enough to be heard in the other ear. Furthermore, there is Rinné's test: A small a′ fork on the mastoid process of the diseased ear is heard on the other side. An A fork on the top of the head is heard exclusively by the good ear. One of the other test does not make the diagnosis of one-sided deafness, but all of them together are of importance. The Barany tests are certainly of great value in diagnosing affections of the vestibular apparatus, but the tests of von Stein are of equal merit. I never rely on one or the other of these tests exclusively in diagnosing an affection of one labyrinth, but expect a positive finding in all of them before I diagnose a disease of the vestibular apparatus.

There are two different sets of apparatus enclosed in the labyrinth; either one can be affected without the other. 1. The hearing function is confined to the cochlea. For this the Bezold tuning-fork tests, comparing air and bone conduction in different variations, as well as tests of the hearing for a whisper, are important. 2. The vestibular apparatus, consisting of vestibulum plus semi-circular canals, can be tested with Stanislaus von Stein's tests, Barany's tests and Romberg's test.

PROF. A. JANSEN, Berlin: Disturbance of the equilibrium—vertigo—is the principal symptom of disturbance of the vestibular apparatus. An examination of the vestibule may be made with cold and heat. Galvanization in the drum membrane in the neighborhood of the oval window causes the patient to get dizzy, and he has nystagmus always on the affected side. Catheterization with cold air gives the patient vertigo, and he has nystagmus on the opposite side. It is to the credit of Barany to have discovered this and to have found the real reason of it; but with this, the Barany reaction, only the function of the vestibular nerve is tested, but a negative reaction does not show whether there is suppuration in the vestibule or not. Usually this is the case, but there may be a healed inflammation. The functions do not reappear and the reaction is negative. Of much greater value for the diagnosis in this disease, if there is suppuration, if there is necessity for making operation, are disturbances in equilibrium and spontaneous nystagmus. It is a symptom which I have found and published fifteen or twenty years ago in my publication on diseases of the labyrinth. Naturally most important is the cochlea. When we observe that the hearing gets better the symptoms are with the vestibular apparatus. Spontaneous nystagmus, especially on the opposite side, but sometimes on the affected side, of which we do not know the reason, with disturbance of the equilibrium, shows that there is recent affection in the vestibular apparatus, while the Barany reaction in old cases shows impairment of the function of the vestibular apparatus, and when you see your old cases treated five years ago and examine them now you will find the Barany negative in cured cases. One can not rely on one method alone.

DR. GEORGE E. DAVIS, New York: I wish to emphasize the importance of the history in the diagnosis of acute diffuse labyrinthitis. These patients usually report one or more severe attacks of vertigo characterized by apparent turning of surrounding objects, also not infrequently nausea and vomiting, and in exceptional cases even convulsions. Chronic middle-ear suppuration is frequently another important feature in the history of these cases. The above history, associated with unilateral deafness, especially of sudden origin, together with rotary nystagmus particularly to the sound side, with the bulb in view straight on, practically establishes the diagnosis. In case spontaneous nystagmus is not manifest, however, it is worth while to confirm the diagnosis by careful functional tests for nystagmus—reactions elicited by turning, by thermal changes (caloric test) and by galvanism. Not only the cochlea, but also the semi-circular canals should be taken into consideration in diagnosing acute, diffuse or suppurative labyrinthitis. I did not refer to circumscribed labyrinthitis. Therefore, our investigations should comprise all the labyrinthine functional tests; those concerned with the reactions of the semi-circular canals (nystagmus and equilibration) as well as of the reaction of the cochlea (hearing), as all these functions are involved. In testing for complete unilateral deafness many are daily using Bezold small a′ tuning fork, not through bone conduction but through air conduction. With the small a′ fork six inches from the deaf ear it is said that one does not get bone conduction to the sound ear. The test, however, is not reliable, as I have witnessed in two cases, after labyrinth operations, apparent hearing of this fork by the ear which had been operated on, but, of course, it was heard by the good ear through bone conduction. It is a well-known fact that with the two-meter speaking tube you get bone conduction even of whispered speech—so this test also can not be depended on. Recently, however, Barany, of Vienna, has devised an apparatus for eliminating both air and bone conduction in testing for unilateral deafness, and I can vouch for its accuracy, having seen it demonstrated repeatedly in his clinics. By using it in the good ear as I have stated, if the patient is completely deaf in the other ear, even the loudest noises are not heard.

SERUM DIAGNOSIS OF TUBERCULOSIS.

THE TUBERCULO-OPSONIC INDEX; THE VON PIRQUET TUBERCULIN SKIN TEST AND THE CONJUNCTIVAL TUBERCULIN TEST.*

MARY C. LINCOLN, M.D.

CHICAGO.

The purpose of this paper is to compare the value of the tuberculo-opsonic index, the von Pirquet tuberculin skin test and the Calmette or Wolff-Eisner conjunctival tuberculin test in the diagnosis of tuberculosis, and to give a critical review of the reports of other workers with these tests.

THE VON PIRQUET TUBERCULIN TEST.

(a) *Material.*—Two solutions are necessary, a 25 per cent. solution of Koch's old tuberculin, consisting of one part of T. O., one part 5 per cent. carbolic acid in

* From the Private Laboratory of Drs. L. L. McArthur and J. C. Hollister, St. Luke's Hospital. Read before the International Congress on Tuberculosis.

glycerin and two parts sterile 0.85 per cent. salt solution, and a blank solution consisting of one part 5 per cent. carbolic acid in glycerin and three parts sterile 0.85 per cent. salt solution. To preserve the two solutions in a sterile manner without evaporation and to have a definite amount for each test a measured drop is drawn into capillary tubing and sealed. A convenient method of doing this is to draw out glass tubing three-eighths of an inch in diameter into long lengths of capillary size, fit a rubber teat on the large end, aspirate a measured drop through the capillary end, seal end and also about 5 cm. from the end so as to enclose the column of liquid in the capillary tube. A large number of capillary tubes of tuberculin can be made up at one time, since the solution keeps indefinitely.

The scarifier may be metal or glass, but should not be sharp enough to break the skin. The one used by myself has a flat sided metal tip about one-sixteenth of an inch in diameter, the edge of which is used in scarifying. A very satisfactory one can be made by filing down the end of a blood lancet to a round flat sided tip.

(b) *Application of the Test.*—Sponge a small area of skin, conveniently on the inner surface of the forearm, with ether. Break off both ends of three capillary tubes, two containing the 25 per cent. tuberculin and one the blank solution. Blow two drops of the tuberculin on the arm about one and one-half inches apart and one drop of the blank solution between the two drops of tuberculin. Dip the scarifier in ether, dry and revolve the edge of the tip about four times in the drop of tuberculin, holding the scarifier at right angles to the surface of the skin and using enough pressure to slightly dent the skin. Repeat in second drop of tuberculin, dip scarifier in ether, dry and scarify in drop of blank solution. The only immediate result visible will be three tiny depressions in the skin in the center of the three drops of liquid. Allow the drops to dry, or cover with vaccination shields until dry.

(c) *Observation of Reaction.*—Usually at the end of 20-24 hours the reaction, if any appears, is at its maximum. A typical reaction consists in a hyperemic indurated swelling rather sharply circumscribed, about 1 cm. in diameter with a deeper colored pinhead-sized central depression. The blank shows nothing or rarely a dull red point. Occasionally, a more marked tuberculin reaction results, that is, vesicle formation in the center, a hyperemic swelling of twice the usual size, and finally crust formation. The reaction subsides in from one to four weeks by gradual diminution of the hyperemia and induration if the reaction was of the mild grade, and by desquamation if the reaction was severe. No constitutional effect has ever been noted. The only subjective symptoms are a slight grade of itching and some tenderness when the reaction is severe. A primary attempt was made to classify the reactions on the basis of their intensity and duration, but such detailed data add nothing to the essential value of the test.

CONJUNCTIVAL-TUBERCULIN TEST.

(a) *Material.*—Through the kindness of the experimental department of Parke, Davis & Co., ophthalmo-tuberculin tablets were furnished us for our tests. One tablet added to 1 c.c. sterile 0.85 per cent. salt solution made a 1 per cent. solution. The solution thus made is perfectly clear, but is not permanent, becoming cloudy in three or four days, so that it is necessary to make up a fresh solution for each series of cases.

(b) *Application of the Test.*—The conjunctivæ of both eyes should first be examined carefully and any injection of the vessels noted. The solution is warmed and one drop is instilled into one eye holding the lower lid out from the eyeball and allowing the drop to spread over the conjunctival sac by gentle manipulation of the lower lid before permitting the eye to be closed.

(c) *Observation of the Reaction.*—Most of those who have made this test have taken pains to examine cases from hour to hour to watch each stage of the reaction, but that is unnecessary. The salient point is as to whether there is or is not a positive reaction. The reaction varies from a mild to a severe grade of conjunctivitis, reaches its maximum usually in about 24 to 36 hours and subsides in from 48 hours to one week. As in any catarrhal conjunctivitis, there is a bright, brick-red conjunctival injection in coarse meshes most pronounced in the fornix and toward the inner canthus and fading toward the cornea. In the meshes of the injected vessels the conjunctiva is ecchymotic. The caruncle is hyperemic and edematous. There is edema of the lids, especially the lower, so that in the more severe reactions there is a narrowing of the palpebral aperture. There is usually an increased lachrymation and in the more severe reactions a mucus or muco-purulent secretion, which, accumulating during the night, may close the lids. There are no subjective symptoms in the mild grades, but in the more marked reactions a sensation of a foreign body in the eye and a burning and smarting, with photophobia, is present.

As is to be expected the strength of the tuberculin solution has much to do with the intensity of the reaction. In my hands a 0.5 per cent. solution for children and a 1 per cent. solution for adults has given the typical conjunctival injection without the more severe symptoms of conjunctivitis, except in a very few cases. In no case have I used a stronger solution than 1 per cent., and in no case have I made more than one instillation.

THE TUBERCULO-OPSONIC INDEX.

Wright's technic of determining the opsonic index was used. The opsonic indices reported in this paper were determined by Miss Stella Dunlap, of whose trustworthy technic I wish to make special mention.

The cases selected by us for the application of these tests may be divided into three groups, (1) cases clinically non-tuberculous, (2) cases of bone and joint tuberculosis, and (3) cases of advanced pulmonary tuberculosis. The non-tuberculous and the bone and joint tuberculous cases consisted chiefly of children ranging from 2 to 14 years; a small per cent. were adults. All the inmates of the Home for Destitute Crippled Children were tested so that nearly every stage of surgical tuberculosis is included. A similar series of cases was selected at Cook County Hospital, with the exception that about 5 per cent. of these were adults. Cases of pulmonary tuberculosis were selected from the most chronic at the Tuberculosis Colony of Dunning Institute. The degree of advancement of the disease may be judged from the fact that 30 per cent. of them died within three weeks from the time of making the tests.

In all our groups of cases from two to four determinations of the tuberculo-opsonic index were made previous to the making of the other tests. The von Pirquet tuberculin skin test was then made, followed after an interval of about two weeks by the conjunctival tuberculin test, with this exception, that in the cases of pul-

TABLE 1.

Report of author's observations of the tuberculo-opsonic index and the tuberculin tests.

I. CLINICALLY NON-TUBERCULOUS.

Case No.	Clinical Diagnosis.	Tuberculo-opsonic Index.			Average T. O. I.	Von Pirquet Tuberculin Skin Test.	Conjunctival Tuberculin Test.	T.—O.—I. on Two Days Following Conjunctival Tuberculin Test.
1	Infantile Paralysis	0.8	0.8	0.7	0.8	—	—	.. ..
2	do	1.2	1.0	0.9	1.0	+	—	.. ..
3	do	0.9	1.0	0.8	0.9	—	—	.. ..
4	do	0.9	0.8	1.1	0.9	—	—	.. ..
5	do	1.1	0.8	0.8	0.9	—	—	.. ..
6	do	0.9	1.0	0.9	0.9	—	—	.. ..
7	do	0.6	1.2	0.9	0.9	—	—	.. ..
8	do	0.9	0.8	0.9	0.9	—	—	.. ..
9	do	..	..	..	..	..	—	.. ..
10	Rickets	1.0	0.8	..	0.9	—	—	.. ..
11	do	0.6	0.6	0.8	0.7	—	—	.. ..
12	do	0.6	0.8	1.2	0.9	—	—	.. ..
13	do	0.8	1.0	1.1	1.0	—	—	.. ..
14	do	0.6	0.5	0.8	0.6	+	—	.. ..
15	do	0.9	0.8	1.0	0.9	—	—	.. ..
16	Bow legs	1.2	0.8	0.7	0.9	—	—	.. ..
17	do	0.9	0.9	1.0	0.9	—	—	.. ..
18	do	0.8	1.1	..	1.0	—	—	.. ..
19	do	0.9	0.7	1.3	1.0	—	—	.. ..
20	do	0.8	0.8	0.6	0.7	—	—	.. ..
21	do	0.8	1.0	..	0.9	—	—	.. ..
22	do	1.0	0.9	1.0	1.0	—	—	.. ..
23	do	1.0	1.0	0.8	0.9	—	—	.. ..
24	do	1.2	0.8	1.2	1.1	—	—	.. ..
25	Scoliosis	1.0	0.9	..	0.9	—	—	.. ..
26	do	0.6	0.7	0.8	0.8	—	—	.. ..
27	Congen. club-foot	0.9	1.1	0.8	0.8	—	—	.. ..
28	Syphilis	1.1	0.8	..	1.0	—	—	.. ..
29	do (?)	0.9	0.8	0.7	0.8	+	+	.. ..
30	do	0.8	1.0	1.0	0.9	—	—	.. ..
31	do	1.2	0.8	0.7	0.9	+	—	.. ..

II. BONE AND JOINT TUBERCULOSIS.

1	Tuberculosis of hip	0.5	0.8	0.8	0.7	..	+	0.9	0.6
2	do	1.0	0.4	0.9	0.8	+	+	0.9	0.8
3	do	1.2	1.1	1.1	1.1	+	+	1.1	1.1
4	do	1.0	1.2	0.3	0.8	+	+	1.2	0.7
5	do	1.1	1.3	1.3	1.2	+	—	0.5	1.2
6	do	1.0	0.9	0.8	0.9	..	+	0.6	1.0
7	do	1.0	1.2	1.0	1.1	—	+	0.8	1.0
8	do	0.8	0.9	0.3	0.7	+	+	0.7	0.7
9	do	0.8	1.2	0.8	1.0	+	+	1.4	1.2
10	do	1.3	1.3	1.5	1.3	..	+	0.5	1.2
11	do	0.6	1.3	..	0.9	+	—	..	0.6
12	do	0.7	0.6	1.0	0.8	+	+	0.6	1.0
13	do	0.7	0.9	0.6	0.7	+	+	..	0.6
14	do	0.5	0.6	0.6	0.6	—	+	..	..
15	do	0.6	0.6	0.6	0.6	+	—	..	..
16	do	0.6	0.9	0.9	0.8	—	—	..	..
17	do	1.1	0.7	0.8	0.9	+	+	0.7	0.9
18	do	0.6	0.5	0.9	0.7	—	+	..	..
19	do	1.0	0.4	0.9	0.8	+	+	0.5	..
20	do	1.0	0.9	0.9	0.9	—	+	..	..
21	do	0.9	0.7	0.8	0.8	+	+	0.8	0.8
22	do	0.6	0.5	0.6	0.6	+	+	..	..
23	do	1.1	0.8	0.6	0.8	+	+	..	..
24	do	0.4	0.4	0.6	0.5	+	+	..	..
25	do	0.7	0.6	0.7	0.7	+	+	..	..
26	Tuberculosis of finger	1.1	0.6	0.6	0.8	—	+	..	..
27	Tuberculosis of knee	0.7	0.6	0.6	0.7	+	+	..	..
28	do	0.7	1.0	0.6	0.8	+	+	..	..
29	do	0.8	1.1	1.2	1.0	+	+	1.3	0.9
30	Tuberculosis of wrist	0.6	..	..	..	+	+	..	..
31	Tuberculosis of shoulder	0.7	1.1	0.8	0.9	+	+	0.5	0.7
32	Tuberculous spondylitis	0.7	0.9	0.6	0.7	+	+	..	..
33	do	1.2	1.2	1.1	1.2	+	+	1.0	0.9
34	do	1.2	1.1	1.1	1.1	+	+	..	..
35	do	0.9	0.8	0.9	0.9	+	+	..	..
36	do	0.8	1.1	0.9	..	+	+	0.5	1.0
37	do	1.0	0.8	0.9	0.9	—	+	..	..
38	do	1.1	0.5	..	0.8	+	+	..	..
39	do	0.8	0.9	0.3	0.7	—	+	..	..
40	do	0.7	0.5	1.0	0.7	+	+	..	..
41	do	1.0	0.7	1.3	1.0	+	+	..	..
42	do	1.0	0.9	0.6	0.9	+	+	..	..
43	do	1.2	1.1	1.6	1.3	—	+	..	..
44	do	0.9	1.2	0.8	1.0	—	+	..	..
45	do	0.6	0.8	0.8	0.7	—	+	..	..
46	do	0.8	0.7	1.0	0.8	+	+	..	..
47	do	0.7	0.7	0.8	0.7	+	+	..	..
48	do	0.9	0.6	0.8	0.8	+	+	..	..
49	do	0.7	0.6	0.6	0.6	+	+	..	..
50	do	0.6	0.7	0.4	0.5	+	+	..	..
51	do	0.8	0.8	0.8	0.8	+	+	..	..
52	do	0.5	0.8	0.5	0.6	+	+	..	..
53	do	0.6	0.6	0.7	0.6	+	+	..	..
54	do	..	..	..	..	+	+	..	..
55	do	1.2	0.4	1.0	0.9	+	+	..	..
56	Tubercular peritonitis	0.9	0.9	0.7	0.8	+	+	..	..
57	do	0.5	1.2	..	0.8	+	+	..	..
58	do	1.0	0.9	1.1	1.0	..	+	..	..

III. PULMONARY TUBERCULOSIS.

Case No.	Clinical Diagnosis.	Tuberculo-opsonic Index.			Average T. O. I.	Von Pirquet Tuberculin Skin Test.	Conjunctival Tuberculin Test.
1	Stage III	0.8	1.1	..	1.0	+	—
2	do	0.7	1.0	..	0.9	—	—
3	do	0.9	0.6	..	0.8	+	—
4	do	0.9	0.9	..	0.9	+	—
5	do	1.1	..	..	..	—	—
6	do	1.3	1.4	..	1.3	—	—
7	do	1.3	0.6	..	1.0	—	—
8	do	0.7	..	..	..	—	+
9	do	0.6	0.8	..	0.7	—	—
10	do	1.5	1.2	..	1.3	—	—
11	do	1.1	0.8	1.0	1.0	—	—
12	do	0.4	0.9	..	0.7	—	—
13	do	1.1	1.0	..	1.0	—	+
14	do	..	..	..	..	—	—
15	do	0.8	0.9	1.0	0.9	+	+
16	do	1.1	..	..	..	+	+
17	do	1.1	0.5	..	0.8	+	—
18	do	1.2	0.8	0.8	0.9	+	—
19	do	1.3	0.8	1.0	1.0	+	—
20	do	..	..	..	..	+	—
21	do	0.8	0.8	0.6	0.7	+	—
22	do	..	..	..	..	+	+
23	do	0.6	0.9	..	0.8	+	+
24	do	1.0	..	..	..	+	—
25	do	1.0	0.8	1.0	0.9	+	—
26	do	0.8	1.0	0.8	0.9	—	—
27	do	..	..	..	..	—	—
28	do	1.1	0.9	1.6	1.2	+	+
29	do	1.4	0.8	1.5	1.2	+	+
30	do	0.6	0.8	1.0	0.8	—	+
31	do	0.8	..	..	..	+	+
32	do	1.3	..	..	..	+	+
33	do	0.9	1.3	..	1.1	+	+
34	do	0.9	0.5	1.3	0.9	+	+
35	do	..	..	..	..	—	—
36	do	1.5	..	..	..	—	—
37	do	0.8	0.9	0.9	0.9	+	—
38	do	0.6	0.7	0.7	0.7	+	—
39	do	1.3	1.1	0.6	1.0	+	+
40	do	0.7	0.9	..	0.8	—	—
41	do	0.8	0.6	0.5	0.6	—	—
42	do	1.2	0.8	0.7	0.9	—	—
43	do	0.9	0.5	1.3	0.9	—	—
44	do	0.7	0.9	1.4	1.0	—	—
45	do	0.4	..	..	..	+	—
46	do	1.1	1.3	1.5	1.3	+	—
47	do	1.4	0.8	0.8	1.0	+	—
48	do	1.4	1.1	1.6	1.4	+	—
49	do	0.8	..	..	..	+	—
50	do	1.1	1.5	1.0	1.2	+	+
51	do	1.2	1.2	0.8	1.1	+	+
52	do	1.6	1.2	..	1.4	+	+
53	do	0.8	0.5	..	0.7	—	—
54	do	1.0	0.9	..	1.0	—	—
55	do	0.5	0.9	..	0.7	—	—
56	do	1.4	1.2	1.3	1.3	+	—
57	do	1.1	1.5	1.6	1.3	+	+
58	do	1.1	1.5	0.6	1.0	+	+
59	do	1.0	0.8	1.1	1.0	+	+
60	do	0.8	0.5	0.8	0.7	+	+
61	do	1.3	1.2	0.7	1.1	—	—
62	do	0.6	0.5	0.5	0.5	+	+
63	do	1.2	0.8	0.8	0.9	—	—
64	do	0.2	0.9	1.2	0.8	—	—
65	do	0.9	1.1	0.9	1.0	—	—
66	do	1.2	0.9	0.8	1.0	+	—
67	do	0.8	0.8	0.9	0.8	—	—
68	do	0.4	0.5	0.5	0.5	—	—
69	do	..	..	..	..	—	—
70	Died in 3 weeks.	..	..	..	..	—	—
71	Died in 2 weeks.	1.3	05	1.1	1.0	+	—
72	Died in 2 days.	..	..	..	..	—	+
73	Died in 2 weeks.	1.1	0.4	0.8	0.8	—	—
74	Died in 5 days.	0.6	1.2	1.5	1.1	—	+
75	Died in 2 weeks.	..	..	..	..	—	—
76	Died in 5 days.	0.5	0.8	..	0.6	—	—
77	Died in 5 days.	1.1	1.1	0.9	1.0	—	—
78	Died in 5 days.	1.0	1.2	1.2	1.1	+	—
79	Died in 2 weeks.	1.4	0.8	1.1	1.1	—	—
80	Died in 1 week.	..	..	..	..	—	—
81	Died in 1 week.	0.8	1.0	..	0.9	—	—
82	Died in 3 days.	1.4	1.0	0.8	1.1	+	+
83	Died in 2 weeks.	0.4	0.9	..	0.6	—	—
84	Died in 1 day.	1.3	0.9	1.2	1.1	—	—
85	Died in 4 days.	0.8	0.6	..	0.7	—	—
86	Died in 3 days.	1.1	0.7	1.0	0.9	+	—
87	Died in 1 day.	1.0	1.4	..	1.2	—	—
88	Died in 2 days.	1.1	0.6	0.8	0.8	+	—
89	Died in 3 days.	1.0	..	..	..	—	—
90	Died in 5 days.	1.1	..	..	..	—	—
91	Died in 7 days.	1.0	..	..	..	—	—
92	Died in 7 days.	1.0	..	..	..	—	—
93	Died in 7 days.	1.2	..	..	..	—	—
94	Died in 1 day.	0.9	..	..	..	—	—
95	Died in 3 days.	0.7	..	..	..	—	—
96	Died in 4 days.	1.2	..	..	..	—	—
97	Died in 4 days.	0.8	..	..	..	—	—
98	Died in 5 days.	1.1	..	..	..	—	—

monary tuberculosis at Dunning the eye and skin tests were made simultaneously. Results were recorded as positive only when there could be no possible doubt, otherwise negative.

Results of Tests.—Table 1 gives the results of the tests in some detail. Table 2 gives a summary of Table 1. There are a few facts noted in the tables that should be emphasized.

1. The three tests do not agree in every case. Eighty per cent. of the cases that yielded positive results to both the von Pirquet and the conjunctival tests were verified by the opsonic index. The von Pirquet and conjunctival tests agreed in 92 per cent. of the non-tuberculous, in 69 per cent. of the cases of bone and joint tuberculosis, and in 64 per cent. of the cases of pulmonary tuberculosis.

2. In spite of the disparity in the results of the tests on the same cases, the sum total of positive results is very nearly the same for each of the tests.

3. As is to be expected theoretically, the more advanced the disease, that is, the lower the reacting power of the individual, the smaller the percentage of positive results to the tuberculin tests. As seen in Table 2, there were only 45 per cent. positive von Pirquet reactions and 33 per cent. positive conjunctival reactions among the advanced cases of pulmonary tuberculosis, while there were 77 and 87 per cent., respectively, positive among the cases of surgical tuberculosis.

4. A study of the tuberculo-opsonic indices given in Table 1 shows that there is a larger percentage of fluctuating indices in the cases of advanced disease and a larger percentage of low indices in the cases of less advanced diseases. It is interesting to note (Table 2) that the percentage of variations of the opsonic index from the normal is about the same as the percentage of positive reactions to the tuberculin tests in the less advanced cases, and is greater in the more advanced cases.

5. Table 1 shows considerable variations from the normal tuberculo-opsonic index of the indices of the non-tuberculous cases. This may, perhaps, be explained by the generally lowered resistance of many of these cases, even though they were clinically non-tuberculous. We have previously found that the normal tuberculo-opsonic index ranged from 0.8 to 1.2, as determined from an examination of over 100 healthy individuals.

6. It is of interest to note that the opsonin content of the blood remained essentially the same after the conjunctival tuberculin test as measured by the opsonic indices taken on the two days following the test.

REPORTS PUBLISHED BY OTHER WORKERS.

It is somewhat difficult to draw conclusions from the results of those who have applied the tuberculin tests in the diagnosis of tuberculosis because of the variability in their technic and because of the variability in the groups of their selected cases. Table 3 gives a percentage report of the results published by those who have made the tests on a large number of cases. Few workers have used both tests on the same cases; nearly twice as many conjunctival tuberculin tests have been made as von Pirquet tests and a larger number of non-tuberculous cases have been tested than either suspected or tuberculous. There is in reality a greater uniformity in results than would at first appear provided one compares similar groups of cases under as similar conditions as possible. The average percentage of positive results is about the same with the two tests.

SOME SPECIFIC CONSIDERATIONS.

1. *Technic.*—By all workers Koch's old tuberculin has been used in the von Pirquet test in 25 per cent. solution. For instillation into the eye the Germans have, in general, used a 1, 2 and even 4 per cent. solution made directly from the tuberculin, while the French and Americans have used a 0.5 per cent., though usually a 1 per cent. solution of the dried tuberculin which had been purified by precipitation with alcohol. In spite of the different preparations used, the percentage of positive results reported is about the same from the Germans and French. Moreover, the qualitative reaction seems substantially the same, with the exception that all observers report a very mild degree of reaction with solutions below 1 per cent. in strength.

The point of repeated instillations seems to me of much greater moment than the strength of tuberculin in judging the value of the conjunctival test. Is the conjunctiva rendered hypersensitive to tuberculin by a single or a second instillation of the same or increasing strength? Schenck and Seiffert[1] used three strengths of solution 1, 2 and 4 per cent., making successive instillations with increasing strength of solution. They found that of 28 cases of tuberculosis, 78 per cent. reacted positive with the 1 per cent. solution; 14 per cent. of those negative with the 1 per cent. solution reacted positive with the 2 per cent. solution, and 3 per cent. of those negative with the 2 per cent. solution reacted positive with the 4 per cent. solution, making a total of 95 per cent. positive with the three instillations; that of 52 non-tuberculous cases 5 per cent. reacted positive with the 1 per cent. solution, 21 per cent. of those negative with the 1 per cent. solution reacted positive with the 2 per cent. solution, and 23 per cent. of those negative with the 2 per cent. solution reacted positive with

TABLE 2.—(SUMMARY OF TABLE 1.)

Class of Cases	Von Pirquet Tuberculin Skin Test		Conjunctival Tuberculin Test		Opsonic Index			
	Number of Cases	Per Cent. Positive	Number of Cases	Per Cent. Positive	Number of Cases	Average of O. I. above or below normal range, e.g. 0.8–1.2 Per Cent.	One or more O. I. above or below normal range. Per Cent.	Two or more O.I. above or below normal range. Per Cent.
Non-Tuberculous	31	1.3	30	0.3	31	1	35	1.3
Bone and Joint Tuberculosis	53	77	55	87	56	36	75	49
Pulmonary Tuberculosis: Stage III	79	45	80	33	81	24	65	23

1. Schenck and Seiffert: München. med. Wchnschr., 1907, liv, 2269.

the 4 per cent. solution, making a total of 49 per cent. positive with the three instillations.

Köhler[2] made a similar series of tests on 169 cases of pulmonary tuberculosis, with the result of 100 per cent. positive on the third instillation. In fact, many workers have made more than one instillation and with different strengths, but have usually grouped together all their positive reactions.

Levy[3] made the following valuable tests in 60 non-tuberculous cases: One drop of a 2 per cent. solution of tuberculin was instilled into one eye; in a few days a second drop of 2 per cent. solution was instilled into the same eye, and at the same time one drop of a 4 per cent. solution was instilled into the other eye. In 75 per cent. of the cases the eye which had had the two instillations reacted positively, while there was no reaction in the eye which had had the single instillation, but of double strength.

comparisons. Lemaire[8] found that 53 per cent. of his positive von Pirquet reactions were verified by the conjunctival test, and that 81 per cent. were verified by the subcutaneous injection test. Schenck[4] reports 90 per cent. of his positive and 80 per cent. of his negative conjunctival tuberculin reactions verified by the subcutaneous injection test. In my series of cases, 80 per cent. of the cases that yielded positive results to both the von Pirquet and the conjunctival tests were verified by the opsonic index. The von Pirquet and conjunctival tests agreed in 92 per cent. of the non-tuberculous, in 69 per cent. of the cases of bone and joint tuberculosis, and in 64 per cent. of the cases of pulmonary tuberculosis. It is difficult to give a satisfactory explanation of this dissimilarity in the tests because too little comparative work has been done. In my review of the work of others, and in my own work, I can see no class to which the one or the other test is especially applicable.

TABLE 3.—PERCENTAGE OF POSITIVE REACTIONS TO THE TUBERCULIN TESTS BY DIFFERENT WORKERS.

Author	Tuberculous				Suspected Tuberculous				Non-Tuberculous			
	Von Pirquet Tuberculin Test		Conjunctival Tuberculin Test		Von Pirquet Tuberculin Test		Conjunctival Tuberculin Test		Von Pirquet Tuberculin Test		Conjunctival Tuberculin Test	
	No. of Cases	Per Cent. Positive	No. of Cases	Per Cent. Positive	No. of Cases	Per Cent. Positive	No. of Cases	Per Cent. Positive	No. of Cases	Per Cent. Positive	No. of Cases	Per Cent. Positive
Baldwin			45 9	91 90			26	30			57	28
Bandler and Kreibich	28	84							37	59		
Calmette			216	100							9	0
Citron	31	80			14	80			45	0.2		
Cohn: Stage I			41	90			22	70			192	5
Cohn: Stage II			45	48								
Engel and Bauer									288	33		
Köhler			169	51								
Lemaire	30	93							75	38		
Lépine			24	60								
Letulle			75	98							50	40
Levi			69	61			18	44			33	12
Levy			41	85			54	60			235	2.5
Olmer and Terras	31	64			3	0			17	0.2		
Schenck			8	100			29	48			63	14
Schenck and Seiffert			28	97			20	60			52	36
Smithies and Walker			35	82							212	0.5
Stadelmann: Stages I-II	46	70	46	63	20	80	20	60	192	50	192	20
Stadelmann: Stage III	18	39	18	30								
Von Pirquet		88								16		
Warfield	12	92			8	100			140	2		
Wolf: Stages I-II	19	63	29	70	117	55	109	30				
Total Number and Average Per Cent.	213	73	889	75	162	63	303	50	794	25	1635	14

It would seem from the above data that at least a temporary susceptibility to tuberculin was established. As further evidence, it is the common experience of those who have injected tuberculin (1 mg. or more) subcutaneously some days or weeks following the conjunctival test to find that a secondary conjunctival reaction was the result or an exaggeration of the one still present, or even in some cases a positive conjunctival reaction when the reaction had been previously negative. Levy,[3] Schenck,[4] Cohn,[5] Bandler and Kreibich,[6] Smithies and Walker[7] report the above results. The diagnostic value of the test then seems to rest on the use of tuberculin of the proper strength to give the necessary reaction at the first trial.

2. *Verification of Tests.*—A few workers who have used different tests on the same cases have made some

3. *Tuberculin Tests in Tuberculosis of the Skin and Eye and in Other Diseases.*—Bandler and Kreibich[6] tried the von Pirquet tuberculin test on 21 cases of lupus and obtained a more marked local reaction than in cases of internal tuberculosis. There was often crust formation with a reacting area of even 30 mm. in diameter.

The conjunctival tuberculin test has been applied in many diseases of the eye and even in cases of tuberculosis, such as tuberculous conjunctivitis, with varying results. Painblan reported a violent reaction in case of tuberculous conjunctivitis followed six weeks later by the healing of the ulceration. Brunetiere reported negative reactions in a few cases of iritis, interstitial keratitis and exudative chorioiditis. Stephenson reported positive reactions in 5 per cent. of 80 different cases of ocular affections.

In diseases other than tuberculosis a few workers have made the tuberculin tests. Smithies and Walker[7] have reported, perhaps, the largest number. They con-

2. Köhler: Deutsche med. Wchnschr., 1907, No. 50, p. 2082.
3. Levy: Deutsche med. Wchnschr., Jan. 16, 1908.
4. Schenck: Deutsche med. Wchnschr., Jan. 9, 1908.
5. Cohn: Berl. klin. Wchnschr., 1907, xliv, 1507.
6. Bandler and Kreibich: Deutsche med. Wchnschr., 1907, No. 40, p. 1629.
7. Smithies and Walker: THE JOURNAL A. M. A., Jan. 25, 1908.
8. Lemaire: Presse Med., November, 1907.

fined themselves chiefly to the conjunctival tuberculin test, and tested cases from practically all services of a general hospital and obtained only 0.5 per cent. positive reactions in the cases clinically non-tuberculous. Several observers have reported positive reactions in typhoid and paratyphoid fever.

As shown in Table 2, the greatest variations in percentage of positive results among workers is seen in the cases clinically non-tuberculous. This is inevitable, and will be so until autopsy findings give us in these cases data to confirm or disprove our clinical diagnosis.

4. *Late Reactions and Dangers of the Tests.*—A small percentage, about 5 to 10, of the cases tested show a so-called late reaction, that is, the reaction does not manifest itself until the second to even the sixth day. The percentage of these late reactions is greater after the von Pirquet than after the conjunctival test. The late skin reaction usually is much like the early reactions, though Stadelmann describes the "late skin papule" as a true tubercle.

Durme and Stocke[9] report five late conjunctival reactions out of 47. They state that this late reaction resembles phlyctenular conjunctivitis, but differs notably in manifesting no ulceration. Lapersonne emphasizes the fact that the late conjunctival reactions are more persistent, and describes them as ulcerative vascular keratitis resembling phlyctenular conjunctivitis.

In my series of cases I have had the usual percentage of late reactions with the von Pirquet test, but have had no late conjunctival reactions and no suggestion of phlyctenular conjunctivitis.

As to the danger of the tuberculin tests, there are no published reports of any harmful results from the von Pirquet skin test, but the same can not be said of the conjunctival test. Opinions differ. Isolated cases of violent reaction and persistent harmful results have occurred from the conjunctival test, so, on the other hand, have negative results followed the test in cases of many different diseases of the eye. It is generally conceded, however, that any inflammatory disease of the eye is a contraindication to the test. No harmful results whatever have followed thus far in my series of cases, although there were four severe reactions, but in no case was there any inflammation of the eye present at the time of the test.

The fact that harmful results do occasionally follow the test, the fact that any local tuberculous process in the eye is aggravated, at least temporarily, and the fact that a local susceptibility to tuberculin appears to be produced by its instillation into the eye as evidenced by the lighting up again of the reaction following the subcutaneous injection of tuberculin seems to me to show definitely that caution should be exercised in applying this test until we have learned more about what the reaction really is.

5. *Prognostic Value of the Tests.*—It is the common experience of those who apply these tests to find that the highest grade of infection gives the lowest percentage of positive reaction to the von Pirquet and the conjunctival test, but gives the largest percentage of fluctuating opsonic indices.

As to the significance of the intensity of the reaction in prognosis Cohn[5] states that the highest grade of infection shows the weakest reaction. Letulle,[10] on the other hand, concludes the degree of infection and the location of the disease appear to have no effect on the intensity of the conjunctival reaction. Wolff-Eisner and Teichmann[11] believe that the cutaneous and conjunctival reactions show a typical disappearance by "law," depending on the stage of the disease. They distinguish three types, (1) the normal reaction with favorable prognosis, (2) the weak reaction characterized by rapid rise, small intensity and rapid subsidence with unfavorable prognosis, and (3) the late more permanent reaction seen in patients who show no marks of active tuberculosis.

In my experience, the intensity of reaction counts for little, as I have had marked reactions in all stages of the disease and have had very slight reactions equally commonly. On the whole, however, the cases of surgical tuberculosis and early pulmonary tuberculosis manifested a more marked reaction than those of advanced pulmonary tuberculosis.[12]

CONCLUSIONS.

1. The percentage of positive reactions to the von Pirquet tuberculin test, the conjunctival tuberculin test and the tuberculo-opsonic index are substantially the same, ranging from 80 to 90 per cent. in favorable cases, and from 30 to 40 per cent. in unfavorable cases.

2. The more advanced the disease the smaller the percentage of positive reactions. The intensity of the reaction does not consistently follow any rule, but tends to be greater in cases of less advanced disease.

3. The von Pirquet tuberculin test seems harmless. The conjunctival tuberculin test should be used with caution.

4. Until we can use the tuberculin tests with more intelligence than our present experience makes possible, I believe we should make more comparative tests in all stages of the disease.

I wish to express my appreciation of the kindness of Dr. John Ridlon, Dr. John L. Porter and Dr. Ernest Moore in permitting me to use cases in their service in making these tests.

9. Von Durme and Stocke: Presse Méd., March 14, 1908.
10. Letulle: Bull. et. mém. Soc. med. d. hôp. de. Par., 1907, 709-713.
11. Wolff-Eisner und Teichmann: Berl. klin. Wchnschr., Jan. 13, 1908.
12. Other references which may be consulted are the following: Baldwin, E. R.: THE JOURNAL A. M. A., Dec. 14, 1907; Calmette, A.: Presse méd., Paris, July 13, 1907; Citron: Berl. klin. Wchnschr., 1907, xliv, No. 33; Engel and Bauer: Berl. klin. Wchnschr., Sept. 16, 1907, 1169; Lapersonne: Presse méd., Dec. 7, 1907; Lépine: Compt. rend. Soc. de biol., Par., 1907, lxiii, 244; Levi: Berl. klin. Wchnschr., Feb. 3, 1908; Olmer-et Terras: Presse méd., Sept. 18, 1907; Stadelmann: Deutsche med. Wchnschr., Feb. 6, 1908; Von Pirquet: Berl. klin. Wchnschr., 1907, xxii, 699; Warfield, THE JOURNAL A. M. A., Feb. 29, 1908; Wolff: Berl. klin. Wchnschr., Feb. 10, 1908.

THE TREATMENT OF EPITHELIOMA BY ROENTGEN RAYS.*

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To-day every one recognizes the Roentgen rays as a means of treatment of epithelioma. Those who have had most experience recognize the use of the rays as the best but not the only method. Pusey's[1] and Schiffs'[2] results and conclusions will represent fairly well the opinions of those who are most competent to judge.

Of the one hundred and eleven successive patients

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Fifty-ninth Annual Session, held in Chicago, June, 1908.

1. Pusey, W. A.: Roentgen Ray in Epithelioma, THE JOURNAL A. M. A., Jan. 11, 1908, l, 100.
2. Lancet, London, Nov. 23, 1907.

treated by Pusey more than three years previous to his report, 72 per cent. were cured and remained well three or more years. He has therefore established fairly well the permanency of the results as compared with any other method of treatment. Schiff says that the favorable effects of the Roentgen rays on epithelioma is indisputable, but that there are obviously biologic differences in the various kinds of epitheliomata which have so far not been sufficiently explained pathologically and anatomically and on which the success of the Roentgen treatment is dependent.

The rays are painless in application and often have an anodyne effect. They produce less scar and are probably less likely to be followed by recurrence than are other treatments. Therefore, it is our duty to treat early such cases as properly belong to this method and not to treat cases that will yield better to some other method or combination of methods.

In this paper, therefore, it is my aim to try to classify the cases according to the results that may be expected and the kind of treatment that is required. I believe that this method of treatment should be used only by those who have taken sufficient pains to master a good technic. Not every one has the time or the opportunity to do this. Therefore, the general practitioner, if he does not do this work himself, should at least have a fair idea of what results should be expected, and the time that will be required to produce such results, for these are the questions that the patients ask. I have omitted case reports, and make this paper short so that I may simply raise these points for discussion. The classification of cases which I make may not be the best, but the cases seem to group themselves naturally as follows:

CLASS I: SUPERFICIAL EPITHELIOMATA.

This includes that large class of small, early, superficial epitheliomata that develop so commonly on the exposed skin of the face, neck and the back of the hands. They are usually not over an inch in diameter, consist of warty excrescences, crusts, or small superficial ulcers. They usually grow slowly and are not very painful. Any one of this group may pass into Class IV. If treated early, this class should yield practically 100 per cent. of cures. Epitheliomata of this class will usually require six to twelve treatments and about two to three months' time. If they have been tampered with by caustics or curettement, or excised and then have recurred, they still will usually yield successfully, but a lesser percentage will recover, and they will usually require more treatment.

Treatments in this class are probably best given at intervals of one week, and healing takes place in two to three months. When necessity demands, these treatments may be given daily and then the patient be allowed to go home and recover. This latter procedure, however, requires more skill, and the risk of a severe reaction or of too much or too little treatment is taken, but in experienced hands I am certain that it is a possibility and often very desirable.

Growths of this class are best treated by covering the surrounding skin to within about one-eight of an inch of the epithelioma, then bringing the tube as close as possible, and treating the patient about five to ten minutes with a soft ray (Benoist 3 to 4), with one milliampere going through the tube. Recently I have had good results by using a very soft tube—one that gives off *x*-rays only when large currents are passed through it—14 to 18 milliamperes. Under such circumstances, the exposures are from thirty seconds to one minute. In this class a mild reaction or erythema in the one-eighth of an inch of healthy skin will serve as an index of the effect of the rays. This mild dermatitis is not necessary, but when the treatment is carried to this degree the results will usually be hastened.

CLASS II: SUPERFICIAL EPITHELIOMATA ASSOCIATED WITH SENILE KERATOSES.

Multiple epitheliomata, occurring in old people, in whom we find the general skin atrophied and covered with numerous precancerous keratoses, yield to the Roentgen rays very similarly to those of Class I, but recurrence is very much more probable. These patients also seem to have lost the power of reaction; at least this reaction is very much delayed, and therefore it does not seem wise to give heavy exposures at short intervals for fear of a severe and troublesome dermatitis.

CLASS III: PEARLY EPITHELIOMATA.

This includes a small group of cases in which there is a circle of pearl-like elevations forming a ridge and surrounding a central soft white scar having an appearance much like healthy skin. This elevated ridge gradually spreads, often irregularly, while the central portion heals. These epitheliomata are of slow development and not very malignant, and one would suppose they would yield readily to the Roentgen rays, but, as a matter of fact, they require more treatment than the other superficial varieties. Best results will probably be obtained by protecting the healed center and treating the border strongly with a very soft ray.

CLASS IV: DEEP ULCERATING EPITHELIOMATA.

Under this class may be grouped those epitheliomata that are advanced and involve the deeper tissues and present large ulcerating surfaces, with indurated edges and often with indurated fibrous bases. They may involve any part of the body, and at times are associated with enlargement of the neighboring lymphatic glands. They often consist of recurrences following the application of caustics, or curettement or excision in Class I.

Most of the failures under the Roentgen rays will be found in this class. Of this class, those epitheliomata in which there is an indurated border with an ulcerating center will usually give good results under Roentgen treatment. Those with an indurated fibrous base seldom give good results. If epitheliomata of this latter group are found on the trunk or limbs where operation is possible, excision or amputation should be advised at once, and this followed by Roentgenization of the glandular area. If an indurated ulcerating epithelioma of this group affects the face or any portion of the body where operation is not advisable, the Roentgen rays will often give relief of pain, lessen discharge, and often be followed by some attempt at healing, but only occasionally does an epithelioma of this class recover. Thus life may be prolonged and made more comfortable, but this treatment must be looked on as merely palliative, and no estimate of the number of treatments required can be given.

The technic in this group approaches that used in the treatment of deep-seated malignant disease. The tube should be farther distant, the rays more penetrative, the time longer and the intervals shorter.

CLASS V: EPITHELIOMATA OF MUCOUS MEMBRANE.

Under this class I place the epitheliomata involving the mucous membranes, and particularly those involving the lower lip, the inner surface of the cheek, and the vagina and penis. Since epitheliomata involving the mucous membrane of the lower lip and the inner surface of the cheeks are rather common, and since epitheliomata of this class are usually very malignant, it becomes important to decide on the best mode of treatment promptly, so that no time is lost after they once come under our attention. The results from any line of treatment are not brilliant. In this class of cases, however, I believe that no time should be lost by Roentgen treatment, but that the epithelioma should be thoroughly excised at once, and this followed by a thorough course of Roentgen treatment of the glandular area. Occasionally, when the epitheliomata of the lower lip are very superficial, or when they involve the outer or exposed portion of the mucous membrane they will disappear under Roentgen treatment, and rarely even more advanced cases will recover, but these occasional results do not justify us in advising against operation. If the glandular area is already involved, it is probably well to radiate the glandular area previous to operation, or if, from any reason, the operation must be delayed, this should be done, using the leather filter described three years ago by myself.[3]

When these epitheliomata involve the inner surface of the cheek they should be excised by means of the thermocautery within the mouth and this operation followed by thorough radiation of the outer surface of the cheek, and the submaxillary glands, and may at times be given within the mouth to good advantage. At times the ulceration produced by this cauterization will heal to a very small area and then remain at a standstill. It will be found to have a fibrous edge and base. A simple excision of this small indurated ulcer will then probably be followed by good results.

CONCLUSIONS.

1. Early superficial epitheliomata involving the skin of the face and the back of the hands, when treated early by means of the Roentgen rays, should give good results in practically all cases. These results are brought about painlessly, with the least possible scarring and often with none, and they are probably more likely to be permanent than the results from treatment by any other method.

2. Epitheliomata associated with senile keratoses yield to the Roentgen rays rather easily, but there is more likelihood of recurrence.

3. Deep ulcerating epitheliomata with indurated fibrous bases do not yield good results under this treatment and should be excised when possible. When this is not possible the rays will often give relief of pain, lessen discharge and prolong life.

4. Epitheliomata involving the mucous membrane of the lower lip and cheek should be excised, and the excision followed by treatment of the glandular area with the Roentgen rays.

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ABSTRACT OF DISCUSSION.

DR. EDWARD BEECHER FINCK, Philadelphia: Since Dr. Pfahler, about three years ago, recommended the use of the leather *x*-ray filter it has been employed at times in two of the hospitals with which I am connected, and always with remarkable success, for the same indications mentioned by Dr. Pfahler. It has also been used with equal success in the private *x*-ray work of some of my professional friends.

DR. ALBERT M. COLE, Indianapolis: Dr. Pfahler touched on the subject of recurrences in epithelioma. There are instances, I believe, in which such recurrences can be avoided by keeping the patient under close and continuous observation. The first indication of a recurrence is often a slight scaliness, and if the condition is observed in that stage it can usually be quickly cured by a few treatments. In my experience, a small percentage of individuals respond to the rays or respond slowly or not at all. In such instances I carry the effect of the rays to the fullest extent until a marked dermatitis is noticeable on the surrounding skin. The normal skin is then covered with a piece of thick lead-foil, leaving only the lesion exposed, and this is then given three or four hard treatments. This method has often proved successful with me in intractable cases. These patients require severe treatment, even at the expense of a burn, and if this is limited to the lesion itself it does not make much difference. In a certain number of cases in which the *x*-ray treatment is only partially successful, perhaps one-half the lesion remaining unhealed, I have had good results at times by resorting to the curette, followed by the *x*-rays. I think that the idea of using a filter is an excellent one. In discovering its advantages, Dr. Pfahler has given us one of the most important aids in *x*-ray technic. I am using this safeguard constantly, especially in cases in which there is glandular involvement and extension to the deeper tissues. By means of the filter the rays which affect the surface are eliminated and those that affect the deeper tissues are allowed to penetrate. When using this filter I do not hesitate to give prolonged treatments.

3. Proc. Am. Roentgen Ray Soc., 1905, iii, 217.

X-RAY USES, DANGERS AND ABUSES.*

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The rôle of image-breaker is always an ungrateful one, and especially so in therapeusis. In the face of the essential problem and crux of medical endeavor, positive claims have an authority and a charm that give them every advantage over merely negative criticism. Yet the iconoclast is as necessary as the builder, and sometimes even more so. A franker and freer discussion, less reticence as to failures, and a more judicial attitude toward successes would save much misconception and much useless labor and suffering. An extra-medical observer, studying the files of our professional journals, would conclude that there are few if any incurable affections, and that the chief difficulty of the modern therapeutist is the selection of one among the many curative measures that are recommended. How far the facts are in accord with this each one of us can judge from our own experience.

These reflections crowd in on me when I consider the development of radiotherapy during the last few years. The marvelous and still mysterious *x*-ray, first used in its most obvious application as a visual aid to diagnosis, was soon employed as a therapeutic agent, and the profession accepted it with alacrity as a remedy of far-reaching power and wonderful effect. To judge by the earlier reports our expectations were fully realized, for astonishingly good results were attained not only in affections amenable to ordinary treatment but also in diseases that were considered almost beyond the reach

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Fifty-ninth Annual Session, held in Chicago, June, 1908.

of our curative measures. It is far from my purpose to criticize these earlier reports; they were doubtless largely influenced by that optimism that is so necessary a part of our therapeutic endeavor. The personal equation, both in the physician and the patient, plays an important part in our work, and to a certain extent it must be admitted that the therapeutic optimist and the therapeutic pessimist each gets results that are modified by their respective mental attitudes.

During the past few years, however, there have not been wanting signs to show that the optimistic tide has reached its height and has even turned. We no longer see, at least from authoritative sources, the wonderful reports to which we have been so long accustomed. One by one the serious internal and external affections for which the *x*-ray was the infallible cure have been taken from the list. Step by step the scope of the remedial procedure in the diseases for which it is still used has been restricted. More and more other remedial agents are employed by even the most enthusiastic advocates of the ray, either in conjunction with it or alone. And, finally, experience is teaching us in a positive and none too pleasant way that while we do have in the ray an agent that may be of therapeutic use, we also have in it an instrument that is capable of doing great and even irreparable damage.

And here let me premise very plainly that this consideration is limited entirely to that field of *x*-ray usage in which I have had personal experience. I do not presume to criticize the use of the tube for diagnostic purposes, general medical opinion being to the effect that its value in this respect is inestimable in many cases. Nor shall I have anything to say in regard to its employment in the treatment of internal diseases; this belongs to the domain of general medicine. I propose to discuss the *x*-ray as a therapeutic agent in diseases of the skin and its appendages only.

Since the time, ten years ago or so, that Freund first used the ray in dermatotherapeutics there has been an immense development of its application for the cure and alleviation of acute and chronic affections of the skin. A complete list of all the dermatoses in which its employment has been advocated would probably include most known skin diseases, and not only such intractable affections as sarcoma, mycosis fungoides, lepra, carcinoma and keloid, but also diseases like acne, alopecia, eczema, seborrhea, hyperhidrosis, molluscum contagiosum, clavus, psoriasis, rosacea, nevus, pityriasis rosea, verruca and many other affections for which we possess safe and accredited remedial procedures. So great has been the enthusiasm for the new remedy that in some quarters it has become almost a matter of routine to apply the ray in every case of skin disease. To judge by some of the published reports, the possession of an *x*-ray apparatus rendered the practitioner almost independent of other dermatotherapeutic means.

Here I reach a part of my subject that I approach with some trepidation, and yet I feel that it can not be omitted. It is the question of the reliability of the results recorded from the ray treatment of these various dermatoses. I do not here refer to those published by observers whose judgment in skin affections I must consider as good as or better than my own; if they get results that I can not attain it is probably from some fault of my own. But I do refer to the long lists published by observers whose qualifications to decide either as to a diagnosis or as to a cure are legitimately open to doubt. When non-specialists, or worse, when *x*-ray specialists who are not dermatologists record *x*-ray cures in diseases of the skin, my mind reverts to experiences which I am sure can be duplicated by each one here present. I remember the so-called lupus, and carcinoma, and ringworm, etc., exhibited in our various medical societies, and I recall the cured epitheliomas with the disease still present, the vanished keloids with the new tissue still plainly in evidence, and the lupus healed under the ray with the tuberculous foci yet scattered through it. It was my fortune but a few days before the present writing to be at a medical meeting at which a number of such cases were shown in evidence of the efficiency of the ray. I can come to no other conclusion but the one that a large part of the published testimony in this regard is not reliable.

Another point of legitimate adverse criticism is the fact that many cases have been recorded as "improved" that have not continued to improve, while many have been recorded as "cured" that have promptly or slowly relapsed. The time of observation, in many cases, has been entirely insufficient. We hear little of these failures and relapses, but their influence is apparent in the changed attitude toward the therapeutic method of many of the most capable workers in the *x*-ray field. Take cancer of the skin, for an example. It is becoming generally conceded to-day that the method is of little permanent curative value in the deeper-seated, infiltrating, and more malignant forms of the disease, and most of the recent writers emphasize the fact that it is in the superficial and slow-growing epitheliomas and rodent ulcers that its use is to be chiefly advocated. In lupus vulgaris of the face, again, Professor Veiel of Canstatt told me last fall that at the dermatologic section of the recent *Deutscher Naturforscherversammlung* he challenged any one present to adduce a single case that had been permanently and radically cured by the *x*-ray alone. In fact, the pendulum in some quarters seems to be swinging entirely the other way, and I know at least one prominent radiographer in New York, connected in that capacity with some of the largest hospitals here, who openly states, as the result of his experience, his disbelief in the efficacy of the ray as a curative agent. Extremes in either direction are to be distrusted, but it seems entirely certain that the field of radiotherapy in dermatology is already being reduced in area.

Expert opinions vary as greatly as to the disadvantages and possible dangers of the radiotherapeutic procedure as they do in regard to its efficiency. There are those who tell us that they use the *x*-ray daily, on multitudes of cases of all kinds, and have never had any trouble at all. There are others, and in increasing number, who use it with caution, as necessarily involving danger. I shall not here attempt any consideration of the nature of the injuries to the tissues that may occur from the ray. We are still very much in the dark as to its nature, and for convenience' sake we may call it a dermatitis, though its ill effects may go very much deeper than the skin. The fact remains, however, that very serious damage may be and has been done. Chronic and intractable ulceration, involving the destruction of the entire cutis and subcutis, and even injury to the underlying muscle and bone, may occur, not to speak of the slighter ill effects such as sclerotization and telangiectasia, or the more serious ones of malignant degeneration and injuries to the bones and internal organs. It has been my fortune to see a considerable number of

these injuries, varying all the way from a moderate dermatitis, disappearing entirely in a short time, to deep-seated and extensive ulceration lasting for years, and tissue-destruction necessitating amputation, etc. There has been no time during the last few years when I have not had one or more of these cases under my care; luckily none of them as yet has been a case of my own. I have also seen a number of very severe cases in consultation or as expert (of course, always on the physician's side); and my experience in this respect is doubtless to some extent responsible for my attitude to the treatment.

Individual experience apart, however, there are certain facts that will be generally admitted. In the *x*-ray we are dealing, in the first place, with a therapeutic agent concerning whose mode of action we know but little, and which is liable, under conditions as yet not accurately determined, to have unfortunately deleterious effects. In the second place, we have absolutely no reliable means of dosage measurement at our disposal; and I make this statement not on my own authority, but in accordance with the conclusions of Geyser, who in a recent paper reviewed all the various measurement devices, and rejected them all. In the last place, we have absolutely no means, save actual trial, of determining that other chief factor in our radiotherapeutic results, the individual susceptibility of the patient's tissues to the rays. Now I would ask any one here present to what extent he would be willing to employ a drug so powerful as sometimes to cause very serious trouble, of whose mode of action he was ignorant, whose dosage he could not measure, and toward which a susceptibility unrecognizable beforehand is sometimes manifested. I am sure that the answer would be: Only in cases not amenable to other safe and recognized measures.

Now there can be no doubt at all that the public is awakening to the fact that the *x*-ray may do damage, and that the physician may be held liable for it. It is true that in New York County, for instance, there have been so far only about eleven suits for *x*-ray damages, and that fortunately none of the plaintiffs have recovered. There are several others, however, projected, to my own personal knowledge. At a recent medical meeting where I took occasion to advert to this subject on the lines of the present paper, Mr. John Taylor Lewis, counsel for the New York County Medical Society, who had defended most or all of these suits, corroborated and emphasized the views that I expressed. The attitude of the court, he said, had in the past been, on the whole, favorable to the physician, and had placed the burden of proof not only of injury, but of improper treatment, on the plaintiff. But there was evidence of a gradual change of attitude in the bench on this point, and he warned his hearers that in future cases the position would probably be reversed and the physician would be asked to explain why he used this treatment at all and thus injured his patient. In other words, the burden of proof as to the propriety, efficacy and safety of the treatment would rest on the defendant.

Under these circumstances the conclusion is warranted that the ray should be used only by experts; it should be employed only by those whose experience with it and skill in its use is such as to justify the assumption that the latest and best means of safeguarding its action have been employed. I feel very positive that it is not a remedial measure to be used by every physician; but that, like intralaryngeal or ocular work, *x*-ray work should be done only by those who have had the special training required to fit themselves for it. The mere fact that a man has a coil or a static machine is no reason for the employment of the method any more than the possession of an operating set would justify an unskilled person in doing a surgical operation. "Psychic effect on the patient," which I have heard adduced in more than jest as a reason for its employment, is not worthy of consideration here.

From the same postulates it follows that the *x*-ray should be used as a remedial agent only in cases in which it is required; that is to say, only in cases in which no other better understood, safer and more generally accepted remedy can be employed. This is a point on which I would lay especial stress. This paper could be swamped, if I so wished, with the statistics of ordinary dermatoses which have been subjected to the *x*-ray, and for which that treatment is advocated. I shall, however, refer only to the very recent paper of Stern read at the International Dermatologic Congress last fall. Coming as it does from one of our largest dermatologic clinics, it may be legitimately supposed by outsiders to be authoritative. Here we find the *x*-ray recommended for the following affections, among others:

Acne vulgaris: Time required, 4 to 6 weeks; exposures, 12. Results, "very gratifying"; 120 cases treated with "generally good results." Am I claiming too much if I say that as much might be accomplished in 120 unselected acne cases in that length of time with curetting, cupping, peeling, and the other recognized and innocuous measures?

Psoriasis: No definite results given, save the statement that the value of the treatment is well established; no influence noted on recurrence. Number of treatments or time required not given. Forty-eight apparently unselected cases treated, possibly including some of the milder circumscribed and seborrheal forms of the disease. Almost every case of such a series can have the skin cleared, under proper conditions, in three weeks or so; and that is all that we can do for any psoriasis. And that with absolute safety; with which I would contrast Stern's statement that, as a rule, psoriasis of the trunk was not treated with the *x*-ray on account of possible injury to the underlying viscera.

Eczema: All varieties of this affection are said to yield more or less readily to the *x*-ray; 225 patients were treated with generally good results in all those who had sufficiently persisted in the treatment. I am sure that there is not a dermatologist here who can not say exactly the same thing, even if he never uses the ray on his eczema patients at all; and I believe that if we had here more definite statements as to the number of radiations, the time required, etc., and the other treatment employed, the balance would incline very strongly against the ray.

Pruritus: Here the verdict is said to be favorable though we are warned of the danger of sterility in treating the genitals. Quite as much might be said, I think, in favor of carbolic acid, menthol, thymol, and many other remedies, and there is no danger of their interfering with the patient's procreative powers.

These will serve as examples of dermal affections that under ordinary circumstances ought never, in my opinion, be treated with the *x*-ray. There may be exceptional cases of such every-day dermatoses that resist all ordinary measures and justify a recourse to radiotherapy. I am greatly afraid, however, that the num-

ber of such cases often depends on whether or not the practitioner possesses a ray apparatus. I believe it entirely superfluous. Here is a case in point: A general psoriasis in my female ward at the City Hospital cleared up entirely in the usual time and under the ordinary remedies, with the exception of a large patch over the sacrum. Here 5 per cent. chrysarobin and pure pyrogallol had no effect other than to remove the superficial scales, though preceded by daily vigorous green soap scrubbings by the nurse. The propriety of using the ray was considered; but by preceding the other treatment by a vigorous swabbing with officinal liquor potassæ, diluted with three parts of water, a prompt reaction and a satisfactory effect was speedily secured.

On the other hand, I do not for a moment deny that there are certain dermatoses in which the use of the ray, with all its disadvantages and possible dangers, is not only permissible, but advisable. Two conditions, in my opinion, must be present. In the first place, the affection must not be a trivial one; there must be sufficient reason, either from the gravity of the disease or on account of its effect on the patient, to warrant the employment of a remedy of uncertain and possibly deleterious effect. And, in the second place, the disease must be one that either in general or in the especial case under consideration, is not amenable to the ordinary, accepted and safe methods of treatment. Keloid, for instance, notoriously resistant to all previous methods of treatment; a rhinoscleroma, for which there is not, so far as I am aware, even a palliative other treatment of any promise; an epithelioma or rodent ulcer so situated or so far advanced that other operative or caustic treatment is out of the question; a lupus vulgaris of great extent and recalcitrancy; these will serve as examples of dermatoses in which it seems to me that the use of the *x*-ray is justified.

Between these two classes, dermatoses for which we possess abundant and proven therapeutic means, and dermatoses acknowledged to be resistant to former methods of treatment, like dermatoses which, occasionally obstinate, are curable in other ways, and in which good results have been reported from the rays. In this class I would place ringworm of the head and beard, alopecia areata, hypertrichosis, folliculitis, favus, etc. Here it seems to me that the *x*-ray should be absolutely rejected as a standard and usual method of treatment. Every one of them is curable in almost all cases, without radiotherapy; and while I am ready to admit that there may be an exceptional case of the kind that is resistant, I hold that the ray should only be used as a last resort, and after a thorough trial has proved the inefficiency of other treatment.

CONCLUSIONS.

Reviewing the entire field of radiotherapeusis in dermatology and its results, it seems to me certain definite conclusions can now be drawn which may in some way serve as a guide to its use, more especially on the part of those who are occasional rather than regular dermatotherapeutists. And while I present these conclusions as personal ones, and with the expectation that all or many of them may not commend themselves to others, they are not formulated without due consideration of the very valuable work in this line that has been done by Zeissler, Pusey, Kassabian, Mackee, Geyser and many others, and more especially of the monograph by Ehrmann of Vienna which has recently appeared.

1. The *x*-ray is a remedy of positive, though strictly limited, value in dermatology.

2. It is to be used with caution, since its dosage is unmeasurable, the individual reaction to it is unknowable, and its results uncertain in any given case.

3. It should be employed only in the more serious dermatoses in any case, and in these only when it is entirely certain that safer and simpler means of cure are ineffective.

4. It is not suited for use by the general practitioner in dermatotherapeusis, but should be employed in this field only by those whose familiarity with the method and with dermatology as a whole is a guarantee of certainty of diagnosis and of the observance of all the cares and precautions prescribed by experience.

5. The *x*-ray should not be used in the treatment of eczema, psoriasis, acne, alopecia areata, alopecia prematura, pruritus, hypertrichosis, folliculitis, verruca, ordinary ringworm, favus, etc., all of these being maladies for which we possess other efficacious therapeutic measures. In lupus erythematosus it is conceded to be useless. Epithelioma and rodent ulcer, except when so far advanced or so situated as to be unsuited for caustics, the curette, or the knife, is also to be excluded from the list.

6. The *x*-ray may be used in lupus vulgaris, though it is not the only method of cure in many cases; in scrofuloderma on account of the tediousness and uncertain results of other medication; in very extensive cases of ringworm of the head and beard for the same reasons.

7. The *x*-ray is treatment of election in epithelioma and rodent ulcer so situated that other methods of treatment can not be employed, or so extensive that other methods are hopeless, and in relapses after other methods; in tuberculosis cutis, erythema induratum, and some other tuberculides; in sarcoma, mycosis fungoides, rhinoscleroma, keloid, and acne keloid, in which diseases no other method that I know of has given as good results.

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ABSTRACT OF DISCUSSION.

DR. M. L. RAVITCH, Louisville: Last summer Dr. Gottheil told me that he did not like to use the *x*-ray and was afraid of it. I have used this therapeutic agent for eight years, and do not see how I could get along without it in a good many skin diseases. In acne, chronic eczema, mycosis fungoides and other skin affections it has no peer. I believe that if physicians would be a little more cautious in the use of the *x*-ray they would find it one of our most useful therapeutic agents.

DR. J. B. KESSLER, Iowa City: The only criticism I have to make on the paper is that many of the statements it contains are too sweeping in character. In other respects I agree with Dr. Gottheil. We frequently see the results of inexperienced *x*-ray work, but in some of the diseases mentioned by Dr. Gottheil, for example, chronic palmar eczema, I do not see how I could get along without it. In that affection I have never accomplished with local applications anything like the effect produced by the *x*-ray. In ordinary acne vulgaris I have found it almost useless, whereas in acne indurata I have never found anything to equal it. I have also found it serviceable in very rebellious sycosis and in one case of mycosis fungoides. I agree with Dr. Gottheil that there are many who employ the *x*-ray simply for the purpose of making a display, and they have done much to bring this valuable therapeutic agent into disrepute.

DR. JOSEPH ZEISLER, Chicago: I consider Dr. Gottheil's paper sound. It contains a warning note which should be heeded. I said about a year ago that the mere possession of

an *x*-ray apparatus was the pretext for many a practitioner and so-called specialist to pose as a dermatologist. At the same time Dr. Gottheil's paper seems to be written more from hearsay than from personal observation. It reminds me of the statements of some writers who oppose the hypodermic use of mercury in syphilis largely because they have never used it and do not know what they are speaking of when they oppose it. With the use of the *x*-ray, as with many other things, it is necessary to have personal experience. For instance, in the list of affections mentioned by Dr. Gottheil he omits entirely one in which the *x*-ray is almost invaluable, namely, lichen planus. I do not know of any other agent which has such a markedly beneficial effect on these lesions as the *x*-ray. In sycosis and in favus I have seen the treatment followed by excellent results, and here particularly it does the one thing indicated, namely, epilation. In the treatment of clavus, corns on the sole of the feet, I know of no remedy as efficient as the *x*-ray; in fact, the range of diseases which legitimately appeal to the *x*-ray are too large to enumerate. I believe, however, that wise conservatism should guide us in its use, and that our first enthusiasm in regard to it carried us too far. In epithelioma it is not the best treatment, because it does not protect against relapses. In rodent ulcer it is, perhaps, the supreme remedy, but the inclination to use it in epithelioma of the lip is very dangerous, and I look on it as next to malpractice to resort to it in such cases. By careful observation, we should now have reached a point where we recognize in the *x*-ray a valuable remedy in many diseases, either in itself or as an adjunct.

DR. MIHRAN K. KASSABIAN, Philadelphia: The value of the *x*-rays has been overestimated, as any new scientific aid that comes to medicine is apt to be. I believe that the danger to the patient now is very slight, I may say *nil*, because the experience we have accumulated within the past twelve years has enabled us to perfect our technic to a considerable degree. First of all, it is necessary that the operator should have a thorough knowledge of the manipulation of the apparatus. In order to protect my patients from burns, I employ an interposing grounded sheet of aluminum, 1/32 of an inch in thickness. I do not use this during the first week of treatment, because in the beginning there is little accumulation of the action of the rays. I begin its use in the second week, and lengthen the time of exposure from three to eight minutes. If the patient is very susceptible and there is any reaction, I am in the habit of discontinuing the treatment for several months. To my knowledge, no physician has been seriously injured by the *x*-rays during the past six years. The accidents that were reported occurred mostly during the first three or four years after the discovery of the rays. As a protection to the operator, I advise him to keep away from the *x*-ray field. He should not use the fluoroscope and should keep away from the machine when the latter is in an active state. The action of the tube can be watched through a mirror. By using these precautions I have not received any fresh burns for a number of years. I repeat that there is little or no danger to either the patient or the operator provided the necessary precautions are taken. Of course, there are still defects connected with the *x*-ray method of treatment. We do not know the proper dosage, but that does not imply that we should discard the method entirely. This and other fields of medicine are in a state of evolution, and we must experiment for the benefit of future generations.

DR. I. S. TROSTLER, Chicago: For the purpose of an interposing shield, to which Dr. Kassabian referred, I now use an ordinary piece of sole leather saturated with water. I have found that this serves the purpose admirably, and even in cases in which a dermatitis has been previously produced, by using this shield the exposures can be continued as frequently as three times a week without danger of increasing the dermatitis. In fact, the lafter subsides just as if the rays were not being used. I am using a modified Cornell tube in direct contact with the patient's skin, and have never had any burns. I have used it only two months, however, so I can not speak from an extended experience with it, and my work with it is still in an experimental stage.

DR. M. B. HARTZELL, Philadelphia: I know of no other method of treatment which produces such beautiful results in cases of eczema of the palms, accompanied by marked keratosis, as the use of the *x*-ray. The lesions disappear as though they were wiped away.

DR. EBERHARD W. DITTRICH, New York: In Dr. Gottheil's absence, Dr. Dittrich read the paper and closed the discussion: I do not agree with Dr. Kassabian that the *x*-ray treatment no longer presents any dangers to the patient. In one of the postgraduate schools in New York I have now a woman under observation in whom both arms are the seat of an ulcerating dermatitis resulting from the use of the *x*-rays for the treatment of hypertrichosis by a very able man. Dr. Gottheil uses and prefers the Cornell tube devised by Dr. Geyser.

RUPTURED TUBAL PREGNANCY. WHEN SHALL WE OPERATE?*

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It is always a questionable procedure in surgery or medicine to make any suggestions that are contrary to the beaten paths of tradition, and especially when such a suggestion would seem to be in direct opposition to a well-known and sufficiently well-established surgical principle. But conservatism, as we all know, in times past has often gone too far, and the progressive spirit in medicine at the present day is no more clearly shown than by the fact that changes are constantly taking place in our ideas with reference to surgical procedures. As a consequence methods which at one time were looked on as firmly established, have been discarded or modified frequently in the past few years, in many instances to the great benefit of suffering mankind. Thus, when I was a medical student, we were taught to give antiseptic douches before and after labor. But now that bacteriologic experiments have shown that these procedures are useless and often extremely dangerous, they have been discarded. Again, I was always taught that a pus tube must be operated on at once for fear of rupture. Now we are taught to operate, if possible, only after the acute stage is over.

Again, consider the attitude that is slowly but surely gaining ground with reference to the carrying out of conservative operative measures, when dealing with diseased conditions of the Fallopian tubes and ovaries. Note the change of heart that many are experiencing in regard to the operative treatment for fibroid tumors of the uterus, when the tumors are not causing any discomfort to the patient, except, perhaps, from the knowledge of their existence. And now in my judgment the time seems ripe to take up the question of the treatment of ectopic pregnancy, more especially in those cases in which a condition of shock is present, following the rupture of the gestation sac. I do not, however, expect at present to be able to do much in the way of changing any one's opinion on the subject, as the ideas that now appeal to my judgment as being the best are so directly opposed to those held by the majority of operators to-day. Nevertheless, I will endeavor to present my convictions gathered from my own reading and experience with these cases, from which

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I have prepared the subject matter of the paper which I will read to you.

OTHER OPERATORS' OPINIONS.

Since I presented a paper on this subject before the American Gynecological Society on May 9, 1907, two similar papers have appeared, one by Dr. F. F. Simpson, of Pittsburg, Pa., entitled, "Deferred Operation for Ruptured Ectopic Gestation," and the other by Dr. Charles A. Stillwagen, of the same city, entitled, "The Treatment of Terminated Ectopic Pregnancy, etc." In both of these papers practically the same ideas that I have advocated are upheld. At the recent meeting of the American Gynecological Society, held in Philadelphia, May 26, 27 and 28, a symposium was held on this subject, and a considerable number of those participating in the discussion favored a conservative view.

Dr. Simpson's paper took the form of a thesis presented by him for admission to the American Gynecological Society at the meeting of the society in Washington in 1907. My paper was published in the July (1907) number of the *Am. Jour. Obstet. and Diseases of Women and Children*, and Dr. Simpson's communication appeared in the November (1907) number of *Surgery, Gynecology and Obstetrics*. Dr. Stillwagen's appeared in the former journal in January, 1908.

To-day I propose omitting much that I have already written on this subject, but I will briefly review some of the principal points to which I have previously called attention in order to bring the subject before you as clearly as possible from the standpoint that I have taken.

Since Werth in 1887 drew attention to the possibility of tubal abortion, this method of termination has come to be recognized as the more frequent outcome of tubal pregnancy. The majority of observers favor this view, and if a careful examination of every ectopic sac were to be made by a competent observer, I believe that it would be found to be correct. An examination of the most reliable statistics shows that tubal abortion occurs in about 75 per cent. of all ectopic pregnancies. In my own experience the proportion of tubal ruptures to abortions is somewhat higher than that supplied by the figures just mentioned. For instance, in my series tubal rupture was found at operation in 9 out of 26 cases (34.6 per cent.), while tubal abortion was present in 10 (38.4 per cent.) instances, an intact tubal pregnancy being met with twice, on opposite sides. Pelvic hematocele was the diagnosis in 4 cases, and there was one case of ovarian pregnancy.

Martin says:

This termination [tubal abortion] is the general rule, spontaneous rupture occurring only in those cases in which occlusion of the abdominal end of the tube precludes the possibility of an abortion, or in which the ovum being inserted in a hernia of mucosa, burrows directly through the tube wall.

TREATMENT OF ECTOPIC GESTATION.

So far as the treatment of ectopic gestation is concerned, the majority of observers have agreed that, in the absence of other contraindications, immediate operation is called for in one class of cases, viz., the early cases in which a positive or highly probable diagnosis of ectopic gestation can be made before rupture or before any severe hemorrhage has occurred, and with this view I am entirely in accord. Patients of this class, however, usually come to us when already suffering from the effects of a tubal abortion, and are almost always in good condition, so that, as a rule, an operation can be safely performed. I do not feel, however, that even in these cases there is any special necessity for sacrificing everything to too great a hurry in carrying out an operation, although it should be performed as soon as the necessary arrangements can be made.

When a tubal rupture takes place, the sac is generally expelled from the ampullary portion of the tube through the fimbriated extremity and with the expulsion of the sac or its contents there is an outpouring of blood in varying amounts, but the quantity of blood thus poured out is seldom, if ever, enough to produce a fatal result, as under these circumstances only exceptionally are any of the large blood vessels injured. Many of these patients undoubtedly recover without any further serious symptoms. It has been stated, in discussions on these cases of tubal abortion, that the incomplete tubal abortion forms one of the most dangerous varieties, owing to the fact that the intraabdominal hemorrhage, which begins and continues slowly and insidiously, may suddenly become profuse and find the patient in no condition to react to stimulation. I cannot accept this statement as being necessarily true, and I believe that it is not founded on fact. I have met with a number of such cases and have frequently found the fetal sac plugging up the ampullary portion of the fimbriated extremity of the tube. In some instances half of the sac was within and half through the tube.

The special object of this paper, however, is to consider the treatment of another class of patients, regarding which there is still quite a diversity of opinion. I refer to those whom we find in a state of collapse following the rupture of an ectopic gestation.

At the present time the majority of surgeons advise operating immediately on these patients, no matter how severely they may be suffering from the effects of shock. The operation is advised with the idea that the patient is bleeding to death, and that a fatal result will assuredly take place unless the bleeding vessels are ligated immediately. As a result of this doctrine (which few of us have had the courage to dispute), I am of the opinion that a great many lives have been lost by the resort to an abdominal or even a vaginal section under these circumstances. I have had this most unfortunate experience in two striking instances, which I will cite later. I believe that a great many more fatal cases would be put on record if the truth were really known about the mortality following operative procedures in these cases, and some of our most expert operators report a mortality as high as from 40 per cent. to 50 per cent. When surgeons advise, therefore, that all such patients should be operated on immediately, it is easy to see why this advice is open to criticism from several standpoints. In the first place being supposedly in face of an inevitably fatal result, if he holds his hand, the physician in charge of such a patient must feel that an operation should be done at once, and that in the absence of a specialist he himself must do it. Very often, however, such a man has had little or no experience in performing abdominal operations, and in fact he may not be even a good surgeon. Under these circumstances the patient's life might be sacrificed simply from the shock of the operation alone; and in other more favorable instances a fatal result might follow the introduction of some infective material. In a series of 38 deaths following operative measures in ruptured ectopic pregnancy 14 were reported as due to a septic infection which followed the operation.

Thus it is evident that, in considering any procedures, before laying down a hard and fast rule that emergency operations are absolutely necessary, the treatment advised must be carefully considered from all standpoints. And far from feeling that such a rule should be agreed on, I believe that if the whole truth about these patients could be known, that it would be found that very many more could be saved by keeping them under observation and not operating until the condition of shock has lessened, rather than by carrying out the operation at once while the patient is in a condition of external shock.

While confessing that very little is known about what we call "shock" and that it can not be estimated in any definite terms, I feel that it must play an important rôle in rendering the patient's condition so serious so soon after the onset of the attack and in many cases before there has been any great loss of blood.[1] Add to the shock already present the moving of the patient from her home to the hospital, the dread of the operation and finally the operation itself, and have we added to, or subtracted from, our patient's chance of recovery?

WHAT PART DOES HEMORRHAGE PLAY?

I am not prepared to state dogmatically that women never bleed to death from hemorrhage following ruptured tubal pregnancies, and I dare say a goodly number of supposedly genuine instances could be put on record. In some of these, however, the deductions would not be substantiated by a more careful examination, and I am of the firm conviction that surgeons are losing many of their desperate cases from overhaste in operating on them. The idea that the abdomen must be opened as quickly as possible after one of these patients is seen in order to check the bleeding—*which may or may not be going on*—seems to have taken deep root in the minds of many gynecologists. If recovery has followed, the inference is, "we have saved our patient." If there is a fatal termination, "the patient died from the previous loss of blood." I feel that the enthusiasm over our "happy results" has carried us too far, and that a calming restraint to our ideas is needed.

Let us consider first the factor of hemorrhage in these cases of ruptured ectopic gestation, and later other influences that may have a bearing on the question. Reports seldom state, even in an approximate way, the quantity of blood found in the abdominal cavity of the patient. Some say "a large amount," others, "a very large quantity"—terms which convey but little meaning. What we would like to have in these reports would be a fairly accurate estimation of the amount of blood present, and in addition the weight of the patient. We would then be in a far better position to judge to what extent "the previous hemorrhage" was responsible for the fatal issue in many of the cases.

Physiologists tell us that a patient can lose an amount of blood equal to about 3 per cent. of the body weight without fatal results. This would mean that a woman of 130 pounds could lose 4 pounds of blood without very serious dangers from the hemorrhage *per se*. I question whether so large an amount of blood, or at any rate much more, is found in the average patient of the above weight, as a result of a hemorrhage from a ruptured ectopic gestation. And just here I should like to raise the question whether one can judge of the actual loss of blood to the patient from the amount of bloody fluid present in the abdomen. At least some of it is probably made up of a serous exudation resulting from an irritation of the peritoneum by the blood that has escaped into the abdominal cavity. In probably every case of ectopic pregnancy there has been a preceding inflammatory condition of the tube, and in consequence of this there is an outpouring of serum into the peritoneal cavity. When the sac ruptures, the peritoneal fluid is at once discolored by even a small amount of blood, and hence this combination of fluid is often mistaken for blood alone. We all have frequently encountered accumulations of serum free and in peritoneal inclusions when operating for inflammatory conditions of the lateral structures.

Cases in which the loss of blood in itself would be sufficient to bring about a fatal termination, would seldom be seen in time to save the patient; and it is my firm conviction that in such cases only rarely (possibly never) is a patient actually saved by operation, indeed at times, she may possibly recover in spite of the operation. Those patients in seemingly marked shock, who recover after an operation, in many instances do so because they are just beginning to react from the condition of shock as the clotting of the vessel has taken place, and in addition to this, procedures are at once instituted for the treatment of the shock by the use of saline infusions, etc. Unfortunately in not a few of the reported cases in which the patients were successfully operated on, the details, from a pathologic standpoint, are not full enough to enable us to judge accurately of the exact condition with reference to the amount of blood present, and also whether or not actual bleeding was going on at the time of the operation.

In support of the statement that many patients have bled to death following the rupture of an ectopic pregnancy, the coroner's statistics of Dr. Formad and others are frequently referred to. In these, in certain instances, the amount of blood which was found was enough to fill the abdominal cavity. Such statements, however, are entirely too meager to give us any definite knowledge, nor can they, I believe, be entirely depended on. I would not, therefore, be willing to accept such statements without a careful analysis of the pathologic findings in each case. The abdominal cavity of many a woman has been filled with blood and yet the woman has survived, and in a given fatal case it must also be proven, that there were no other, and possibly equally important factors in the causation of the fatal result.

BLEEDING POINTS SELDOM FOUND.

In answer to the question, "Why is an abdominal section performed when a ruptured ectopic gestation occurs?" the answer, I presume, will be: "To stop the hemorrhage that is going on." But I would then ask "How frequently has an actual bleeding vessel of any size been observed on opening the abdomen?" For my own part I believe that when we are called to see a patient who is suffering from a tubal rupture, in almost every instance the active bleeding has ceased. The condition that we find such a patient in is one of shock which varies in degree according to the individual circumstances. If a hemorrhage is not going on, what is accomplished by the operation aside from removing the blood and ruptured sac from the abdomen, and what

1. Experiments with dogs show that a condition of marked shock can be produced within 10 or 15 minutes after cutting the uterine vessels, and in the first experiments during this time the animal's condition made me feel that it must die in a short while. In some instances these changes are noticed within from 3 to 5 minutes after the vessels have been cut. Nevertheless, the dogs recovered from the condition of shock after varying periods of time.

possible harm would these structures do if they were left in the abdominal cavity for a few days more or less?

But it will be said that, as a rule, after opening the abdomen we often find a considerable amount of fluid blood present. Granted, but how frequently do we see an actual bleeding vessel? And if bleeding is observed just as soon as the surgeon begins to manipulate the structures, how can he be certain that his manipulations are not responsible for the hemorrhage that he encounters? What often appears to be continuing hemorrhage may be caused by the fresh blood that has been poured out when the sac is finally expelled from the tube and then wells up through or alongside of the clotted or old blood that may be present. In my experience with ectopic gestation (which covers now some 50 cases in all), as a rule, after opening the abdomen I have found a considerable amount of fluid blood present, but I have never seen an actually bleeding vessel of any size. One operator reports a case in which 2,500 c.c. (2½ quarts) of blood were found in the abdomen, and from a small opening in the posterior surface of one tube enough blood was oozing to fill a teaspoon in one minute. Recovery followed. I believe that in almost every instance of this sort when we find spurting or oozing from the rupture in the sac it is generally caused by the blood that has been held under tension in the sac.

Until recent years I had always held, as is maintained by many surgeons at the present day, that there was a bleeding vessel which must be stopped as soon as possible. On this hypothesis I formerly ligated or clamped the ovarian and uterine artery on the affected side just as soon as I could get the patient's abdomen opened. On further investigation, however, even in the cases in which marked collapse was present, I never was able to observe a bleeding vessel of any size connected with the site of the rupture in the tube, until I began my manipulations of the abdominal contents. The following case which came under my observation several years ago, did not show a bleeding vessel when I opened the abdomen, and yet the abdominal cavity was filled with blood. It also demonstrates in a striking manner a death from the shock of the operation, while the patient was on the table.

History.—E. H., aged 23, married, was admitted to the Johns Hopkins Hospital, March 20, 1891, complaining of shortness of breath and severe pain in the lower abdomen. One week previous to her admission she had been seized with severe cramps in the abdomen, accompanied by vomiting. She complained of pain all over the abdomen. She had gone about three weeks over the regular time of her menstrual period. Owing to the condition of mental hebetude it was difficult to obtain a satisfactory history.

Examination.—Her condition on admission was as follows: Rather anemic; face drawn; temperature between 99 and 101 F.; pulse varying from 96 to 130 beats a minute, small, compressible and regular; respirations from 37 to 42. Lungs negative. Soft systolic murmur heard at pulmonary cartilage. Abdomen symmetrically distended, particularly prominent in the middle, tense, tender on pressure, but tenderness not localized. On vaginal examination fluctuation on both sides of the pelvic cavity was communicated to the vaginal finger on palpation of the abdomen. A hypodermic needle introduced through the abdominal wall in the median line, midway between the umbilicus and the symphysis pubis, brought away dark, bloody fluid.

Operation.—A diagnosis of a ruptured ectopic pregnancy was made, and an abdominal section was carried out at once. As soon as the peritoneal cavity was opened a stream of dark fluid blood, about one inch in diameter, spouted seven inches from the incision. As soon as the intra-abdominal pressure was relieved the pulse began to flutter and the respirations to grow shallow. It was evident that she was rapidly sinking. All the fluid blood was at once washed out with six liters (quarts) of sterilized physiologic salt solution. As soon as the uterus was palpated the ruptured right tube was recognized. *This ruptured portion was about the size of a three-cent piece, with no visible remains of fetal structures attached to it.* The tube and ovary were transfixed and excised. The left side was normal. Owing to the feeble condition of the patient further examination of the abdominal cavity was not attempted, and the abdominal incision was quickly closed, soon after which life became extinct. The whole operation lasted only fifteen minutes.

Dr. Welch, in discussing this case, said in part:

The sudden death coming on as it did while the patient was on the operating table can be explained in the following manner: The abdominal contents, including, of course, the abdominal vessels, were evidently subjected to great pressure from the large amount of fluid blood extravasated into the peritoneal cavity. Now it is well known that the abdominal vessels are capable of holding almost the entire amount of blood in the body, so that if the portal vein in a dog is ligated the dog soon dies from the withdrawal from the circulation of the large quantity of blood accumulated in the abdominal vessels. The sudden release of the pressure on the abdominal vessels by the removal of the blood from the peritoneal cavity permitted the vessels to expand and receive a much larger volume of blood. In consequence of the great reduction in the volume of circulating blood which had already resulted from the intraperitoneal hemorrhage, this sudden accumulation of blood in the dilated abdominal vessels brought about a condition incompatible with the continuance of the circulation. We know that death from hemorrhage is the result of a diminution in the volume of the blood and not simply of the withdrawal of a nutritive fluid, for just as much good is accomplished by injections of salt solutions as by transfusion of blood. What is necessary in such cases is an increase in the volume of fluid in the blood vessels, and in the present case it was the sudden diminution of this volume in the rest of the circulatory apparatus, in consequence of its accumulation in the abdominal vessels, which brought about the final collapse of the already greatly enfeebled circulation. Of course there is only a remote analogy between the conditions in the present case, in which a sudden extravasation of a large amount of blood had occurred into the peritoneal cavity and soon after this had been withdrawn, and the conditions in an ordinary case of chronic ascites in which the fluid has accumulated slowly, the vessels have had time to adjust themselves to the altered mechanical conditions and the general volume of circulating blood has not been greatly reduced by previous hemorrhage. We should not, therefore, expect such an accident to follow the withdrawal of the fluid in an ordinary case of ascites as occurred in the present instance.

The explanation as given by Dr. Welch of the cause of death in these cases is very suggestive and it seems to me would warrant the carrying out of stimulating procedures, in order to adjust the circulatory apparatus, and waiting until this equilibrium has been established before performing a major operation. I would like, also, to refer briefly to a case in which operative measures were carried out with a fatal result, before the patient had fully recovered from the condition of shock, from which she was suffering. In March, 1900, I saw this patient in consultation with my colleague, Dr. C. F. Hoover, who had made the diagnosis of a ruptured ectopic pregnancy. She gave the following history:

History.—H. D., aged 38, married, iv-para, had had one miscarriage at three months, fifteen years previously, youngest child 10 years old. Her last menstrual period had occurred nine weeks previously. She said that she had got her feet wet at the time of the expected menstrual period, and the same night she had had severe cramps in the lower abdomen

with bearing-down, labor-like pains. She had had four similar attacks, each lasting about an hour, the last one having occurred one week before I saw her, following a bath. The menses were due at the time but did not appear. She had also complained of nausea and vomiting, with anorexia for the previous two weeks, with some slight backache.

Examination.—On vaginal examination a softish irregular mass, about the size of the closed fist, could be made out filling up the cul-de-sac. When I first saw the patient the pulse was feeble and rapid, varying between 160 and 170. The skin and mucous membranes were blanched; the respirations were shallow. She was in such a bad condition that I thought that she would expire in a short time. After the use of stimulants and warm external applications the condition began to improve slowly, and after about 18 hours the patient was taken to the hospital, to be kept under observation. On admission to the hospital, twenty-four hours after I first saw her, the pulse was 130 and the general condition was still improving. On the day after her admission to the hospital the pulse varied from 104 to 114, and on the next day from 92 to 104; on the fourth day it was 100 and of fairly good volume. The temperature varied between normal and 100 F. The patient was very pale, but she was free from pain, and I considered that I could now perform the operation with safety.

Operation.—She was taken to the operating room and ether was administered. As soon as she was under the anesthetic, and placed on the operating table, the pulse increased considerably in rate. She was at once given an infusion of salt solution, and I incised the posterior vaginal fornix, as I felt sure that she would not be able to endure an abdominal section. As soon as the cul-de-sac was opened, several ounces of fluid blood escaped into the vagina. I then washed out the cul-de-sac with a hot saline solution, and packed it with plain sterilized gauze tapes. While carrying out this procedure the pulse became imperceptible, and the respirations labored. She was hurriedly removed to her bed, but death ensued in spite of all our efforts, in about an hour after the operation. The operation together with the time of anesthesia consumed 30 minutes.

I consider that this patient expired from the shock of the operation, superadded to the condition of shock which had been produced by the previous loss of blood. I now feel certain that it would have been wiser in this case to have waited at least five or six days more or possibly, as advised by Simpson and Stillwagen, several weeks before attempting to carry out an operation. The amount of blood that escaped at the time of the vaginal incision was insignificant, and I have no reason for believing that there was enough blood in the abdominal cavity to cause this fatal result so soon after the operation and four or five days at least after the rupture of the sac had taken place. Such patients as this are frequently thought to have been operated on too late but, as I have said, I believe that it would be much better in such cases to wait even longer, in order to get the patient in the best possible condition, before subjecting her to an operation. From the fact that thousands of women have survived a tubal abortion without having undergone an immediate operation, and from the fact also that in all probabiltiv many have passed through a tubal rupture and have recovered without having to undergo any operation whatsoever, it can justifiably be assumed that the various series of statistics dealing with the number of deaths due to a ruptured ectopic gestation are faulty in many respects.

In support of this statement I would like to quote from a letter that I received some months ago from a physician in Wheeling, W. Va. He says:

I had a recent case of hemorrhage from a ruptured gestation sac in which the patient was pulseless, two hours after the initial pain and shock. I advised immediate intervention but this was refused. On my arrival home I found your paper and the discussion on it in the *Journal of Surgery, Gynecol. and Obstet.* Through the refusal of the patient I was compelled to carry out your advice of not adding shock to shock and I am glad to say that the next day the woman had a full pulse well below 100 and she recovered without an operation.

Again, certainly, some emphasis must be laid on the results obtained by operators who have carried out the deferred plan of operative treatment. Thus Neugenhauer had 135 cases with one death; Winter and Winkel a whole series without a death; Thorn had a 1 per cent. mortality; Simpson in 100 cases had not a single fatal result; Stillwagen records over 20 cases without a death. In my own 30 cases there was one death.

In this connection I would also refer to the striking instances of shock with weak and rapid pulse in the cases reported by Simpson and Stillwagen of patients who recovered and were successfully operated on later. The favorable results obtained in such a large number are too numerous to be due to "purely blind luck" as one critic of the deferred plan of treatment has claimed.

Many of these cases of ruptured ectopic gestation are only brought to light at an abdominal section some time after the primary rupture has taken place. The operation is most frequently performed to remove an irritating and adherent inflammatory mass. These patients surely are not operated on because a hemorrhage is going on and, so far as the condition is concerned, from this standpoint the operation could be postponed almost indefinitely.

HEMORRHAGE ALONE SELDOM FATAL.

In a case of tubal abortion, one can scarcely conceive that the hemorrhage is often sufficient to produce a fatal result. I have met with a few cases in which there was what seemed to me to be a large amount of blood in the abdominal cavity, but I can not subscribe to the conclusion of some authorities that even in these cases the loss of blood will be sufficient to produce a fatal result, *if an operation is not performed at once.* I can, however, easily understand how under these circumstances, if an operation is performed at once, and a fatal issue takes place, the result could readily be attributed to the loss of blood, plus, however, the final and more important insult, the shock of the operation. In other words, as I understand the matter, the immediate operation under these circumstances more frequently takes away the woman's only chance of recovery. Now, if such a patient be given an anesthetic and an abdominal operation performed, the immediate shock of the operation alone might be sufficient to cause her death. But often superadded is an increase in the condition of shock by the production of a fresh hemorrhage and other debilitating effects caused by the manipulation of the tissues. Undoubtedly in this way a certain number of the immediate or early deaths following an operation are to be accounted for. Whatever we do, we must lose some patients, but I believe that our percentage of fatalities will be lower if we refuse to add shock to shock, and are satisfied to assist Nature to bring about a wholesome reaction before proceeding to a serious operation.

The procedure that I have employed for the past five years with satisfactory results, is somewhat as follows: If there are signs of improvement in the patient's condition (and this in my experience always takes place) I keep the patient under further observation. The change for the better is brought about by carefully stimulating the patient by the use of saline infusions

under the breasts and in some instances, also, of hot saline enemata, of appropriate bandages and weights, since experimental work has shown that these measures appear to favor the cessation of hemorrhage. Then as soon as, but not before, all signs of shock have disappeared, I operate.

If the patient is not vomiting or nauseated I administer a stimulant in small quantities by the mouth. In addition to this, I give morphin hypodermatically for the pain and nervousness. External heat, also, is applied to the body, and the foot of the bed is slightly elevated. Strychnin sulphate is also given hypodermatically in doses of from one-tenth to one-twentieth gr. every half-hour or so according to indications. While this treatment is being carried out the operating-room is prepared so that it can be used at a moment's notice.

I have also carried out this treatment in those cases which I have seen for the first time at the patient's home. Then as soon as the woman had recovered from the shock of the rupture she was transported to the hospital, where an operation could be performed at any time when the necessity might arise. In this connection I would like to protest against the reckless way in which these patients are hastily and thoughtlessly taken to a hospital for an immediate operation. Such a procedure undoubtedly aggravates the condition of shock, when there had been much loss of blood, and frequently it will start the bleeding afresh by dislodging the clot which has formed at the seat of the rupture. Every patient in my series has gradually improved so that after two or three days, and in some instances after twelve days, the operative procedures have been carried out with very little, if any, shock.

In this connection, operators, in discussing the importance of performing the immediate operation, frequently state that the patient was in very bad condition and that the operation had to be performed at once. Now how can one state positively that in any given case the patient will not recover from the shock, until one has tried some such plan as the one here outlined, for a reasonable length of time. Of course before an absolute decision is arrived at a large series of cases must be collected.

The above procedures I have now carried out in thirty cases. I would like to call attention to the condition of five of the patients on admission to the hospital. All of them showed evidences of severe shock, and by this I mean that they were in such a serious condition that death seemed imminent. Every one of them showed considerable improvement in their condition over that when they were first seen, except one whose condition was only slightly improved when she was operated on the day after admission to the hospital. In these five cases, with the exception of the one case already noted, operation was not considered advisable until the third, sixth, eighth and twelfth day, respectively. None of my thirty patients was operated on earlier than the day after admission (eighteen to twenty-four hours), and there were only three who came to operation so soon. The remainder were operated on at periods ranging from three to twelve days after admission, the average being five days, eight of the seventeen being operated on on the third day.

In the series there was one death. This occurred in a patient whose convalescence from a celiotomy for tubal rupture had progressed favorably to about the tenth day when signs of ileus began. The abdomen was reopened on the next day: a volvulus and intestinal adhesions were found. Death ensued one hour later and was due to the volvulus which had resulted in all probability from a postoperative sepsis. The death, therefore, was in no way connected with the delay in carrying out the operation, as the patient was in excellent condition at the time of the operation and there were very few adhesions of any sort. The tubal rupture had occurred some days before I saw her, and as her condition was very good, there appeared to be no necessity at all for immediate operation. The operation was performed on the fourth day after the patient's admission to the hospital.

EXPERIMENTS ON DOGS.

During the past nineteen months I have been conducting a series of experiments on dogs to see if I might not be able to throw some light on this subject from the standpoint of hemorrhage. These, so far, seem to show that, in dogs at least, hemorrhage from large internal vessels ceases before it is sufficient to prove fatal.[2] The operative procedures included excision of the ovary, division of the broad ligament, with section of the left uterine vessels, section of the uterine vessels on both sides and other lesions. Not one of these dogs succumbed to the hemorrhage although I probably subjected them to as great a risk of bleeding to death as is incurred by the average woman suffering from a ruptured tubal pregnancy.

The experiments may be divided into the following series:

1. Division of uterine and ovarian vessels.
2. Division of uterine vessels producing shock. Secondary operation on dog in condition of shock.
3. Division of uterine vessels and observations on the blood pressure and hemoglobin.
4. Division of uterine vessels and observations on the pulse, respiration and hemoglobin with special reference to the time of the clotting of the blood.
5. Division of the uterine vessels, observations on the pulse, respiration and hemoglobin before and after bandaging and after applying weights to the lower abdomen of the dogs.
6. Division of the uterine vessels with dog in perpendicular position; observations on the pulse, respiration and hemoglobin.

From the experiments, which now number 31, I feel justified in believing that the intra-abdominal hemorrhage, such as we meet with in women in collapse from a ruptured ectopic gestation, is not sufficient in itself to cause a fatal termination in these cases. It will doubtless be maintained by some that this experimental work has shown nothing more than that the dog can withstand a greater loss of blood than the human being—a recognized fact—and yet it seems fair to assume, as will be seen after consulting the protocols, that in many of the experiments, I made the tests sufficiently severe to more than equalize the factor of resistance to the loss of blood in the dog, as compared with that of the human being under fairly similar conditions.

In other words, taking into consideration this difference in resistance, by cutting both uterine arteries and veins and in some instances both ovarian vessels besides, I subjected the dogs to a risk of bleeding to death as great as that incurred by the average woman suffering from a ruptured tubal pregnancy.

The experiments further show that the clotting proba-

2. These experiments will be given in detail elsewhere.

bly occurs within fifteen to twenty minutes after the vessels have been incised, and the time of clotting can be predicted by the hemoglobin index. They also show that the application of bandages, but more particularly by the aplication of weight to the lower abdomen, the pulse is rendered slower and of better quality, and the hemoglobin remains higher.

CONCLUSIONS.

1. Conservative operations on the tubes and ovaries are now common, although only a few years ago much more radical procedures were considered necessary for the safety of the patient.

2. More conservatism in the treatment of ectopic pregnancy is called for in the majority of cases.

3. When the diagnosis of ectopic pregnancy is certain, operative measures are indicated; but in most cases the danger is not sufficiently imminent to warrant immediate interference unless the condition of the patient is otherwise satisfactory.

4. Many women not only survive the effects of a tubal abortion or rupture, but also recover even without an operation.

5. Not more than 5 per cent. of the victims of ectopic pregnancy die at the time of rupture, whereas after the immediate operation in cases of ectopic gestation in 1,176 cases in 25 clinics the mortality was 8 per cent.

6. When a patient is seen in a state of collapse, as the result of a ruptured ectopic sac, she should not be operated on until the condition of shock has been tided over.

7. These patients when they die rarely if ever succumb from loss of blood alone, but mainly from shock. Why then should we superadd to the original shock the additional shock of a major operation, with all the exhausting preliminary procedures?

8. In support of the view that these patients die from shock and not from loss of blood, we have clinical observations of good authorities, and also experiments on animals, the first showing that patients whose abdomens were filled with bloody fluid survived; and the second proving that dogs when exposed to dangers from hemorrhage (sufficiently severe to more than equalize the factor of resistance) do not succumb.

9. In most of these cases, when we operate to ligate a bleeding vessel, no bleeding vessel is found. In some cases the bleeding is undoubtedly started again by the manipulations of the operator.

10. What frequently appears to be a continuing hemorrhage may be produced by a welling up of the blood that was poured out when the sac finally escaped through the fimbriated end of the tube.

11. Some of the reasons for believing that the hemorrhage is not so great as has been generally supposed at the time of the rupture are as follows: (a) The great majority of ectopic sacs rupture between the first and third week of gestation. (b) The point at which the impregnation takes place is in a small area formed by a diverticulum in the tube, and the chorionic villi have only a feeble attachment. (c) From 75 per cent. to 78 per cent. of the ruptures occur through the fimbriated end of the tube, and are tubal abortions not more dangerous, so far as hemorrhage is concerned than those occurring through the cervix. (d) The next most frequent place of rupture is the isthmic portion of the tube, which is also free from any large blood vessels. (e) The point of rupture in the gestation sac practically never involves the ovarian or uterine vessels. (f) As a result of the inflammation which precedes the ectopic gestation, there is a relative increase of the connective tissue in the tube, and owing to the contraction of the connective tissue the vascularity of the tube is limited. (g) The placenta is generally attached to the posterior wall of the tube and as the rupture is generally through the anterior or lateral wall of the tube, the placenta is not lacerated, but retains its firm attachment to the wall of the tube and is subjected to pressure.

12. Physiologists teach that a woman weighing 130 pounds, must probably lose 4 pounds of blood before succumbing to the effects of the hemorrhage *per se*. So large an amount of blood is rarely found in the abdominal cavity—the sanguineous fluid is a mixture of blood and a serous exudate.

13. The sudden removal of a large quantity of recently accumulated fluid in the abdomen, before the other vessels have had time to adapt themselves to the altered mechanical conditions, is dangerous and may be followed by fatal syncope.

14. Patients in whom the bleeding would be sufficient to cause death are rarely seen in time to be saved by an operation for ligating the bleeding vessel.

15. Our best operators give a percentage of 40 or 50 per cent. as their death rate after immediate operations during shock.

16. The results obtained by not a few good operators who have waited and carried out the deferred operation are certainly worthy of consideration. Their favorable statistics certainly can not be attributed simply to "blind luck."

17. The experiments on dogs suggested (a) that the cessation of the hemorrhage may be determined from the hemoglobin readings. (b) That the subcutaneous injection of physiologic salt solution has a beneficial effect in stimulating the patient, and that it does not start up the hemorrhage afresh. (c) That the use of proper bandages or appropriate weights applied to the lower abdomen is beneficial in hastening the cessation of the hemorrhage and in improving the pulse, respiration and general condition.

18. So long as there is a reasonable evidence that immediate operation may be the wrong procedure, it is our duty to hold our hands and leave something to Nature. The medical profession to a large extent has given up the use of dangerous drugs, unless the indications for their use are clear. Should not operators have the same consideration for the lives of their patients?

It gives me great pleasure to acknowledge the assistance given me in the preparation of this by Drs. Frank C. Ainley, M. B. Bonta and Fred W. Hall and in the carrying out of the experimental work in the Pathological Laboratory of the Lakeside Hospital.

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ABSTRACT OF DISCUSSION.

DR. C. C. FREDERICK, Buffalo: I have found that about 5 per cent. of all cases of ruptured ectopic pregnancy are accompanied by severe hemorrhage, one which approaches the danger point for the patient. Therefore, 95 per cent. of all cases of ruptured tubal pregnancy are cared for by Nature's own conservative method of clotting as a result of the lowered arterial tension and the small size of the vessels involved in the rupture. Therefore, we are never brought face to face with decision on the subject of immediate operation except in about 5 per cent. of the cases of ruptured tubal pregnancy which we are called to see. The majority of ruptured tubal pregnancies are not diagnosed by the physician in from three to four, five or six weeks, and I have operated in two cases which were not diagnosed for three months after rupture. I

have lost as the result of operation on immediate rupture three patients out of six. The fourth patient I did not operate on, but she died. The fifth patient I operated on lived. The sixth case I saw with the physician in attendance. The patient was in good condition and it was decided to wait. I became busy with some other work, the patient grew worse, another physician was called who operated and the patient lived. It appeals to me as reasonable that there is a very small percentage of these patients who will die from hemorrhage if let alone; and it is a question whether they will not die if we operate. Therefore, the immediate operation is a very grave question; but I believe that I would be in favor of operating in these cases immediately if I felt sure that they were severe enough to imperil the life of the patient. Five per cent. of all cases of ruptured tubal pregnancy come under that category, and in them I believe that operation ought to be done at once. There is a principle in surgery that a bleeding point that can be controlled ought to be controlled.

DR. J. H. CARSTENS, Detroit: I wish that Dr. Frederick would either tie the vessels or not tie, either operate or not operate in these cases. We have had conservatism in appendicitis, and to-day more people die of appendicitis in this country than died ten years ago. If this doctrine is promulgated, in the next ten years more patients will die of extrauterine pregnancy than to-day. It has taken us a long time to teach this truth. I know that in Michigan the general practitioner as a rule makes the diagnosis of extrauterine pregnancy, and a good many more than 5 per cent. of the patients are seen by the surgeon. Twenty years ago, before we knew all about extrauterine pregnancy, I saw patients die from extrauterine pregnancy, and every one of us has seen the same thing. The question simply is: Has this tube ruptured? and I have seen them ruptured when only as large as an ordinary hazelnut, right in the center—or has it aborted? From tubal abortion there is not so much danger as from a direct rupture. I should like to know how any one can tell which process took place in the abdominal cavity. I do not know how to tell. I wish I could tell, because if I knew there was tubal abortion I might wait. If there was rupture through the tube and some blood vessels I would not wait. What difference does it make whether one or the other process has taken place? We see some cases in which a little rupture occurs. The patient improves, and in three or four days another rupture takes place and the patient is *in extremis*. What produced the shock? The shock was produced first by blood in the abdominal cavity. But we also have shock from loss of blood. If the pulse rate increases hour by hour, I know that woman has hemorrhage, and I hold that that hemorrhage must be stopped.

Dr. Frederick's own statistics show that there is not such a great mortality in operation; he had one patient die. He took thirty minutes for the operation. I am not astonished that any patient should die in an operation of thirty minutes. The surgeon tries to do too much when operating in these cases. They need very little anesthetic. You can make a little cut, get hold of the tube, put on two clamps and let it go—do not wash out all the blood. Let the clamps stick out, if necessary, and in twelve or twenty-four hours you can wash out the blood. You might as well operate on the patients as not. If you do not those patients have trouble later. So I hold that it is better to operate unless the patients are *in articulo mortis*. You should give just a little ether, enough to dull the patient. Prompt operation is the only correct procedure.

DR. C. C. FREDERICK, Buffalo: I was discussing Dr. Robb's question of immediate operation in those cases of bleeding. I operate in cases of extra-uterine pregnancy just as promptly as Dr. Carstens does. I was not speaking about leaving those cases without operation, but of immediate operation in severe cases of hemorrhage. I always operate in cases of ruptured tubal pregnancy when the patients have rallied from the shock after rupture.

DR. G. BETTON MASSEY, Philadelphia: Years ago a number of those interested in electricity urged its use in unruptured cases, but it was thought that when the tube ruptured into the abdomen an operation was urgent. Of late I have doubted the necessity of operation at this time, and only three years ago the matter was brought before me in the case of a member of my own family, a brief statement concerning which may be of service. This person was suddenly prostrated after missing two or three menstruations. I was telephoned for and found her recovering from collapse one hour after the sudden prostration. The collapse having slightly lessened, the question of what should be done was uppermost. The general practitioner in charge supposed that I would surely not follow my own theories in my own family. I called into consultation Dr. Joseph Price, who advised against operation because the patient had been given morphin. He concurred in the diagnosis that the abdomen was filled with blood up to the chest. We moved the patient to the hospital to be ready for an operation should additional symptoms arise, but nothing further was done, to the great disgust of the village hospital attendants. Four weeks later the patient was taken home and the high-tension faradic current was given in twenty-minute treatments daily, with great comfort to her. There was steady improvement and absorption of the blood; the patient went to the Maine coast six weeks later, and to-day is in perfect health. Another case was that of a former patient of mine whom I saw eight hours after prostration, with five doctors in consultation. The symptoms were clearly those of abdominal rupture and filling of the abdomen with blood. In this case I consented to a slight opening by the surgeon, provided he would keep his hands out if there was clean blood, but even this was not done. This patient also recovered absolutely, but in this case without electricity or anything else, save the care of a skilled nurse and rest in bed. She has since passed successfully through a normal pregnancy. I believe, therefore, that an opportunity is now given for the members of the medical profession with surgical tendencies to change their opinion on an important subject.

DR. RUFUS B. HALL, Cincinnati: I think the question of immediate operation in these cases of extreme condition of collapse a very important one. The physician is called to see the patient in perhaps not the first attack of pain. If he finds her in collapse without a radial pulse, the question comes up whether or not to operate immediately or wait until she rallies. The surgeon under such conditions is up against a difficult problem. If he operates immediately the patient may die; if he leaves her a few hours she may die. The majority of patients will recover from the first, second or third hemorrhage, and they can be operated on in the interval. But in the cases of the small minority of patients I think the problem has not yet been solved. I do not know of any way to determine the question referred to by Dr. Carstens, whether or not the patient will stand an anesthetic. With a patient *in extremis* who has had her first rupture, with perhaps an interval of seven or eight weeks since her last menstrual period, practically without pulse, with perhaps two or three pulsations per minute in her radial artery, I believe that the best chance for life is given by not operating immediately. The patient may die if you let her alone. She probably will live if you do not operate at that time. I saw a patient a few months ago, 34 years of age, a strong vigorous woman of 160 pounds. When I was called to see her, a hundred miles from my home, the doctor said that she had not had any pulse for five hours. She then began to show an irregular pulse. I saw her eight hours after the attack. The heart beats were 160 to 180. I did not operate, for I reasoned that the hemorrhage had stopped, but operated sixteen days afterward and took away several pints of blood clots. The woman is alive to-day, but would have died had she been operated on at the time I first saw her. You must differentiate these cases.

DR. THOMAS B. NOBLE, Indianapolis: I have no doubt that if these cases which have been mentioned had been submitted to Dr. Robb he would know with his experience which patients to operate on immediately and in which cases procrastination would be justifiable. I believe that the teaching of procrastination, which is an interpretation which will be placed on his paper, is absolutely wrong. While he was reading that idea came to me, and already we have it so interpreted and already the

advice given to apply an electric current to an abdomen filled with blood. These cases are the ones that come primarily to the general practitioners who are not so skilled as Dr. Carstens or Dr. Robb or the larger number of men here who meet such cases frequently, and these men will not interpret such cases correctly. If, being in doubt, they have before them this paper of Dr. Robb, which says that in the vast majority of these cases operation can be delayed without danger, they will delay and many women will lose their lives—just as many other persons have lost their lives as the result of the teaching of Ochsner relative to appendicitis, misinterpreted, as it has been by men who are not operators. This paper will do for specialists, for the men who are able to differentiate, but to send this paper out broadcast among men who are not operators is wrong. I fear this paper, yet I appreciate it highly.

DR. D. TOD GILLIAM, Columbus: In all my operations in cases of ectopic gestation I have lost only one case from immediate shock. On the other hand, I have taken delayed cases, but not from choice. I have operated on the patients in the interval, and I have lost a much larger percentage of such patients from the fact that the blood (some of the hemorrhages were intraligamentous), being so near the rectum, had become filled with germs and when I did the operation my patient died from infection. I believe that there is greater danger in delaying operation, if you are going to operate at all, than there is in operating immediately and making it a quick operation, going in and coming out just as quickly as you can. I have had patients on the table who were apparently moribund, in whom no pulse was perceptible, and I have always operated on such patients in the Trendelenburg position. In these cases I have gone in just as rapidly as possible, paying no attention to the blood whatever, bringing up the tubes and ligating them and closing the wound by the most rapid method possible. The patient was then put to bed in the Trendelenburg position and salt infusion applied under the breasts, and I think I have saved a number of patients in this way who otherwise would have died. In regard to the hemorrhage it does kill, and that too often. I recall a case of a woman in our city who in the evening was sitting reading to her husband. She suddenly put her hand on her abdomen, complaining of great pain. Several physicians, among them a surgeon, were called and, in spite of what they could do, she died in a few hours. The postmortem showed that she had died from hemorrhage from the ectopic pregnancy.

DR. AUGUST MARTIN, Berlin, Germany: I think that there are some rules which have always been recognized in surgery, one of which is that when there is a ruptured vessel it should be secured. Dr. Carstens was right in saying that we should differentiate cases of abortion and of rupture of the tube. Cases of rupture used to be much more dangerous but my experience has taught me also that in cases of abortion the expulsion of the ovum does not always mean the safety of the patient. I have seen on the dissecting table patients who had died from abortion after the extrusion, and I have seen clinical cases in which undoubtedly the abortion had occurred a long time before, and in spite of all renewed bleeding was fatal or nearly fatal. In the treatment of extrauterine pregnancy, statistics show better results from early operation. At first, every one advocated operation. Then some observations were made in which old blood clots were found and reabsorption observed and so the opinion began to prevail that operation might be delayed and possibly prevented altogether. But, if I am not mistaken, the general opinion is gaining for immediate operation. We must, however, differentiate the cases. If I see a case immediately after what I like to call the catastrophe, I would not hesitate to open the abdomen at once. Whether the operation is done in the patient's home or in a hospital may depend on the opportunities for doing the operation at home. A speaker at the meeting of the American Gynecological Society just held in Philadelphia said that he had seen some thirty years ago, when he was with me in my clinic, three patients brought into the hospital in a state of extreme anemia and pulseless, and that I operated at once, and he saw these three patients recover. I would open the abdomen with one incision. I would take out the tube with one attempt and tie the vessel. Then I would have time to apply other means for stimulation. I used to operate on all these patients at once because as soon as the bleeding vessel was secured shock was diminished. When I see these cases in a later state all these surrounding circumstances must be taken into consideration. In our work at Greifswald we met with a great number of cases bleeding very little from the uterus, but in a state of extreme anemia. Some four or five weeks ago we had a case in which there was a large mass behind the uterus filling out the pouch of Douglas. We could by operative aseptic procedures secure the arteries and stop the bleeding. We must differentiate these cases at once, but in all acute cases to which we are called and see the patient in the state of shock—as you call it, of anemia—in which we dare not doubt that there is rupture or abortion of the pregnant tube, I have always taught my pupils to operate at once.

DR. O. BEVERLY CAMPBELL, St. Joseph, Mo.: I believe that some of the speakers have overlooked the real point at issue. Two years ago, in a paper read before the Missouri Valley Medical Association I advanced the same principle advocated by Dr. Robb, that in the majority of cases of extrauterine gestation with rupture or abortion immediate operation should be performed; but, that in the cases in which there was excessive hemorrhage accompanied by shock, in which the patient was in practically a dying condition, delay for a certain length of time would be in favor of the patient; that the patient would not bleed to death from that initial rupture and from the first hemorrhage. Nature clots the blood and hemorrhage ceases, and if we wait long enough there will be a repeated hemorrhage. Before hemorrhage occurs, however, we can rally the patient in the majority of instances and she will have a better chance to withstand the shock of operation. I have had an experience of five cases of this kind in my own individual practice. I have waited from twenty-four to forty-eight hours and in four of these cases the pulse improved from 130 to 100 and 105 and the patients stood the operation and recovered. In the fifth operation I waited for four days because of the desire of the patient. She seemed in fair condition for operation with a pulse of 120 and a temperature of 102. I found the abdomen well filled with blood and performed the operation in twenty minutes. There were evidences of diffuse peritonitis. The intestines were well distended and the patient died forty-eight hours afterward. I think that there is danger of infection from waiting and that the majority of these patients should be operated on. It is an important surgical principle to decide what our patients can stand. It is not the question of the ligation of an artery, but to save the life of the patient. The condition of the patient must be considered. If it is one of extreme shock the hemorrhage has in all probability ceased. We can rally that patient, operate a few hours later, and save her life.

DR. ANDREW MCDERMID, Chicago: I have gathered one suggestion in regard to cases in which the abdomen is full of blood, namely, to open the peritoneum gradually and allow escape of the blood somewhat gradually, on the same principle with which we would deal with a large ascites or perhaps an empyema of the chest, thus avoiding the rapid change of intra-abdominal blood pressure. I placed on record a few years ago a case in which the pulse was 176 when I saw the patient five days apparently after the rupture, that is, five days after intrauterine hemorrhage began. The day before I saw her, her attending physician had curetted, deeming it a case of abortion. This woman was also suffering from air hunger in complete shock. I felt that we could not wait to rally such a patient. I got her immediately to the hospital. I think I learned a lesson, in that I was over zealous in introducing my hand through the mass of blood and seizing the tube and ovary. The case is on record and I will not go into detail. I lacerated some other vessels and there was a severe hemorrhage. A large quantity of normal salt solution was introduced under the breast. The pulse went to 180, but the woman is well to-day. I do not think she would have lived had we delayed operation. In a subsequent very similar case I took a little more time and deliberation and dried out the pelvis so that I could seize the tube and ovaries and tie up the artery under the eye.

In regard to leaving these cases for some weeks or months, I saw a case in which both the attending physician and myself favored immediate operation. Another gynecologist advised delay. It is true that the patient recovered, but after long suffering for weeks an abscess developed in that hematoma which burst into the rectum and discharged. I am sure that that patient would have been much better if she had been immediately operated on. I think that these cases are much on the same plane as cases of appendicitis and I still incline to the view that all ought to be operated on as early as possible.

Dr. Charles O. Thienhaus, Milwaukee: I instruct every physician in case of rupture of extrauterine pregnancy not to transport the patient to the hospital (because of the danger of augmentation of hemorrhage and shock), but to call me and I operate immediately at the home of the patient. In a case seen some time ago the attending physician asked me to operate the following morning on a patient with ruptured extrauterine pregnancy; there was free bleeding going on (no hematocele or hematoma being discernible). I convinced him that operation was necessary immediately—during the night. I operated by the aid of petroleum lights, the patient's pulse having risen above 150. The woman is alive to-day and it is my firm belief that any further delay would have resulted fatally, as Nature had made no provisions whatsoever to stop the continuous hemorrhage by the formation of adhesions. I had a similar experience a few months ago in a case of rupture of a rudimentary horn of the uterus, pregnant in the fourth month. The fortunate circumstance that I could operate one hour after the rupture on this extremely exsanguinated patient with a pulse of 140, saved her life. In all cases of free hemorrhages I think it unsurgical not to operate immediately. Our aim must be to save that 5 per cent. of patients with ruptured extrauterine pregnancy who die without operation from hemorrhage and so-called shock.

Dr. Bernard Cohen, Buffalo: In the presence of free bleeding it is my custom to cut immediately and endeavor to catch hold of the bleeding part and tie it up. Too much fingering will always cause more bleeding. My experience teaches that it is better to go in immediately. Give the patient an hour to two to recover if necessary, then go in and keep the transfusion going; have the saline infusions and transfusions ready, doing the infusion and the transfusion at the time the surgeon is doing the cutting.

Dr. W. O. Henry, Omaha: I should be sorry to have the impression go out that this section endorsed the sentiments expressed in the paper in a general way. Dr. Robb's experience in which he reported doing a vaginal section in which the patient died was not a fortunate one. The length of time taken and the result seemed to me rather to show that the work was not thoroughly done. After an operation is done by the abdominal method and the bleeding controlled, sometimes we fail to get full benefit of our operation by not continuing the saline solution every two or three hours until the patient is fully recovered from the shock. It is also important to maintain abdominal pressure either by the saline solution put into the abdominal cavity and then a firm binder outside of that; or, if time has not been taken to clean out the blood, if it is an extreme case, put on a heavy padding under the binder. Pressure of this kind is an important means of keeping the patient alive.

Dr. I. S. Stone, Washington: I heard the other day a man of great experience say that he had opened the abdomen and found a gallon of blood in the abdominal cavity. We hear again from Dr. Robb that certain patients can lose a certain quantity of blood in proportion to their weight. It seems to me that there must be a discrepancy. In the first place, a very fat individual has not the same amount of blood in proportion as a lean individual. If we open the abdomen and find a gallon of blood, it is either because all the blood is in the abdominal cavity or because something else besides blood is there. It is well known that a large quantity of serum is often found in the abdominal cavity when any form of irritation is present. Therefore, a portion of that blood was serum. I infer from the paper that blood clot forming in the ovarian and uterine arteries was not washed out by any infusion of salt solution. Dr. Robb did not mention whether he used intravenous transfusion or merely subcutaneous transfusion; what I call subcutaneous infusion some call transfusion. Dr. Robb has said that the clot was not displaced. He has relieved my mind. My last case of death from tubal rupture occurred just before venous transfusion began. I had not then performed the operation myself, nor had any one of my friends. After that period there was a time when we were afraid to give intravenous transfusion because of the fear of causing further hemorrhage. Dr. Robb has shown that the patient does not bleed to death because of the pushing out of that clot.

Dr. Hunter Robb, Cleveland: I agree with Dr. Frederick that the proportion of ectopic pregnancies that come under the class of cases that I am discussing would be about 5 per cent. It seems to be a fixed idea with most of the speakers who have discussed my paper that in every case of ruptured ectopic pregnancy the physician has a bleeding vessel to contend with. If this were really the case immediate operation, of course, would be necessary in most instances. On the contrary, however, I believe that an actual bleeding vessel is rarely met until manipulations of the abdominal contents during the preparation for or at the operation have displaced the clot. If the whole truth were known about the number of patients that have died after an operation in this class of cases, I feel certain that the list would be greater than that of those who have supposedly bled to death without an operation.

By many authorities the hemorrhage that accompanies a tubal abortion is held to be greater than that following a rupture of the tube, and in many of the former cases the signs of shock are more pronounced. I feel sure that the hemoglobin index will tell us in every instance whether or not a hemorrhage is still going on. If the hemoglobin has ceased going down, clotting in the vessel has taken place. I consider the hemoglobin index of such great importance that I would insist that every general practitioner and every surgeon should never allow his technic in this procedure to become rusty. With the Sahli hemometer the procedure can be carried out in a very few minutes. Such an examination could be made every few minutes while the patient is being prepared for the operation, and if the hemoglobin index remains stationary we may without hesitation defer operation until the patient is in a still better condition. In teaching medical students and the general practitioner to defer operation, I fully believe that I am giving them less dangerous advice than if I told them an operation must be done just as soon as the diagnosis was made, no matter how extensive the condition of shock might be. If we advise that all these patients should be operated on at once a conscientious physician, believing that unless he operates immediately the patient will certainly die, must take on himself to operate despite the fact that he may have had little or no experience in performing abdominal operations. Under such circumstances out of the patients who do not succumb as a result of the operation, a goodly percentage will die from the infection that is introduced at the time of the operation. In making any positive statement, therefore, we must look at this subject from the broadest standpoint, and consider what would be the greatest good for the greatest number of patients. Nor can I look on the condition as in any way analogous to an appendicitis, as in the latter we have the results of an inflammatory condition to deal with, whereas with a ruptured ectopic gestation we are dealing with the effects of a hemorrhage, and any inflammatory condition that may be present is of secondary importance. But it has been asked: "Why do these patients that seem to be in a moribund condition after being operated on, at once begin to show signs of improvement?" I think that the improvement is to be explained by the fact that many of the patients are just recovering from the shock of the loss of blood, as the clotting of the vessel has already taken place, and that the stimulating measures, such as the infusion of saline solution and other methods for adjusting the circulation are also in part responsible. My paper, however, does not advise treating such patients from the medical standpoint except in so far as they should be put in a proper condition before being submitted to a surgical operation. I believe that all, or nearly all, should be operated on, but not while they are in a condition of shock.

Again, a patient will sometimes appear to be in a condition of acute anemia when judged by the pallor of the face, but this apparent anemia is often due to a lack of cutaneous transparency, or to the fact that the skin contains only a slight amount of blood. Dr. Stone's question with reference to the disturbance of the clot which forms in the vessels by the saline solution is an important one. Our experiments go to prove that the clot is not disturbed at all.

Clinical Notes

A CASE OF POLYCYTHEMIA WITH CYANOSIS.

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BATTLE CREEK, MICH.

The following case is reported chiefly because it belongs to a class that has been but recently recognized and that calls for further study.

Patient.—A. G. H., male, aged 51, married, no children, home Oklahoma, entered the Battle Creek Sanitarium April 27, 1908.

History.—The patient's father died from some internal abscess at 45; his mother died from inflammation of the stomach and bowels. The patient was well during early life. He was engaged in office work for twenty years. His habits were regular and good. Three years ago he began to have periodical headaches about once a week. The pain during these attacks was generally of a throbbing character and at times very intense. The face would become red and congested, suggesting the presence of fever, but the thermometer, as observed by his wife, showed the temperature normal or slightly subnormal during the attack, while the extremities were cold and clammy. At first he was able to sleep these attacks off, being quite relieved the following morning and able to resume work. The attacks were never accompanied by vomiting nor other digestive disturbance. During the fall of 1907 the headaches became more frequent and more severe, leading to the use of bromo seltzer, aspirin and other anodynes, although the patient denied having used these excessively at any time. During these severe attacks he began to feel a certain unsteadiness or giddiness, with flashings of light or star-like appearances before the eyes. In December he had an unusually severe attack, lasting several days and accompanied by extreme photophobia, which confined the patient to a darkened room. This attack was only relieved by a hypodermic given by the attending physician. During this attack there was extreme cyanosis of the face and neck. According to the description given by his wife, the face and neck became a deep, dusky red. The eyes were blood shot, and the ears, lips and tip of the nose were so blue or purple as to cause alarm at his appearance. The finger nails were also cyanotic. The headache and cyanosis never entirely disappeared after this attack, but the patient was able to be about and was fairly comfortable, suffering, however, from exacerbations of his symptoms every few days. During this time the pain became more neuralgic and located in the back of the head, shooting over the vertex and terminating in the right eye. During January and February, 1908, he was treated at Hot Springs, Ark., without improvement. (The patient denies the possibility of any specific taint.) While in Hot Springs he had the second major attack, requiring a hypodermic injection to relieve the headache. He had a third attack at home shortly before entering the sanitarium. Each of these major attacks was accompanied by considerable hemorrhage from the gums and pharynx, and more or less capillary oozing continued between the attacks, but was always worse just before and during the exacerbations of headache and cyanosis. Twice the patient had experienced severe pain in the precordium, radiating down the left arm, somewhat resembling angina pectoris. At the time of entering the sanitarium the patient's general health was fairly good between the attacks, but he constantly felt "groggy" and rather unsteady as if drunk, and complained that his mind was always cloudy. His bowels were obstinately constipated and he had depended on a dose of salts every morning since the first severe attack in December.

Physical Examination.—A well-developed man, 5 feet 9 inches tall, weighing 145 pounds net. The general appearance of the face and neck was a dark red color, somewhat resembling the tint of an American Indian. The hands were affected in a less noticeable degree, while the unexposed surfaces were of normal color. The conjunctivæ were deeply congested; the nose, ears, lips, tongue and mucous membrane of the mouth all showed a bluish-red or purple color. The heart and lungs were normal. The abdominal findings were negative. The spleen was not palpable, although the splenic dulness was increased. (At later examinations it was found distinctly enlarged and palpable one inch below the costal margin.) The reflexes were all normal. The ophthalmoscope showed the veins of the fundus much dilated, blue and tortuous.

Laboratory Findings.—The total strength of the body as determined by the dynamometer was 3,620 pounds, as compared with 4,385 pounds for the normal average man of the same height.

Urine: This was examined five times during the patient's stay, and always showed fairly normal characteristics, the average amount for the several specimens being 900 c.c. with a specific gravity of 1017, urea 17 gm., total solids 33.5 gm., chlorids 6 gm. Indican was present in considerable quantity and uric acid crystals in abundance. One specimen showed a few hyalin casts. Pus, blood, albumin and sugar were uniformly absent.

Fecal Examinations: These showed stools of a very putrid odor, of faintly alkalin or neutral reaction, with an excessive number of anaërobic and putrefactive bacteria and indol in large amounts. There was no blood or parasites reported.

Blood Examination: This showed hemoglobin, 120 per cent.; red cells, 160 per cent. (8,000,000); white cells, 250 per cent. The systolic blood pressure was 153 mm., diastolic 85 mm., pulse 78. (As the hemoglobin was estimated by the Dare instrument it was always reported as 120 per cent., which is the highest reading on the instrument, although from the color and the number of red cells it was probably considerably higher than this.) During the four months that the patient was under observation the blood tests were repeated ten times; the average of these findings for hemoglobin was 120 per cent. The red cells varied from 8,000,000 to 6,000,000 per c.mm., with an average of nearly 7,000,000, or 138 per cent. The white cells were still further increased, the average for the ten counts being 169 per cent. The average systolic pressure was 137.5 mm. and the diastolic 95.5; the average pulse, 78.8. The red cells were always of normal size and shape. A differential count of the white cells was made eight times. The average number of white cells studied at each count was 500. These counts showed the number of small lymphocytes constantly decreased, the average number found being 6.8 per cent., as compared with a normal of 22 to 25 per cent. The polymorphonuclear neutrophiles were constantly increased, the average number found being 84.5 per cent., as compared to 72 per cent. The other normal elements were neither increased nor decreased. Of the pathologic elements, myelocytes were uniformly present and constituted 1.6 per cent. of the whole. Normoblasts were reported but once in the eight counts, and only two were found then. Megaloblasts were reported three times and constituted 0.9 per cent. No other pathologic elements were found. (I am especially indebted to Drs. Nelson and Risley, of the Battle Creek Sanitarium laboratories, for the above reports.)

Clinical Notes.—The patient entered the sanitarium April 27, 1908. During the first two weeks the headache was constant and quite severe, especially in the back of the head.

May 7: There was an acute exacerbation, corresponding in symptom and appearance of the patient to the major attacks already described, although less severe. The whole head was deeply congested and the cyanosis of the lips, nose and ears was striking. The cyanosis was also very observable under the finger nails. The headache was distressing and there was considerable vertigo. There was capillary hemorrhage from the

mouth and pharynx. This attack gradually subsided without confining the patient to bed.

May 10: The patient was feeling unusually well in the morning, but was taken in the afternoon with a sudden pain about the heart, radiating down the left arm, during which the cyanosis was increased.

June 1: Pain and tenderness suddenly developed in the calf of the right leg, resembling the results of a severe sprain, but there was no history of injury or unusual exertion to account for it. The soreness, which was acute, yielded but slowly to rest and applications of heat, liniments, clay dressings, etc. The patient was confined to bed for a week, and then was only able to get about with crutches for another week. There was no local swelling, redness or other signs of inflammation. This attack may have no relation to the general trouble, but may be related to the muscular cramps reported by some observers. Another special symptom was an annoying pruritus which came after bathing. This affected the legs especially and lasted fifteen to thirty minutes after each hydrotherapeutic application. The sensation was described as a pricking or stinging so severe as to make scratching almost irresistible. There was no eruption or redness of the skin. This symptom had been noticed at times for the past five years.

Treatment.—The treatment was chiefly symptomatic, tonic and eliminative. The constipation was met by a laxative diet, stimulating applications of hydrotherapy over the liver and abdomen, massage, mechanical vibrations and electricity. After the first two weeks the bowels moved daily without any form of cathartic. The intestinal autointoxication was met by an antiseptic, low-proteid dietary, with charcoal and lactic acid cultures, etc. The cephalic congestion was counteracted by derivative applications of heat to the feet and legs with cold to the head. General eliminative and tonic measures, such as the electric light bath, salt glow, sprays and douches, especially over the liver and spleen, were used daily, together with cold baths and an outdoor régime to increase oxidation. During the seventh week, just after the attack of soreness in the leg, the patient was put on potassium iodid rather experimentally. This was gradually increased from 30 drops *per diem* to 60 and was continued over a period of eight weeks, being discontinued two weeks before the patient left. No special effect was noted from this, unless it was a temporary lowering of the blood pressure, which during this period was recorded successively at 140, 135 and 120 mm. The reading, taken one week after the potassium iodid was stopped, however, showed the pressure to be again 145. These fluctuations may have been due to some other cause, but if due to the iodid it suggests that the result came from some effect on the heart or the caliber of the blood vessels rather than to any change in the condition of the arterial walls, since the fluctuation was too rapid for actual tissue change. The *x*-ray was applied to the spleen during the last two weeks of treatment, the patient receiving in all six applications. No results were observed during this short period. During his entire illness the patient was able to sleep well. The appetite was generally good, the patient eating on an average 2,000 calories per day. The weight was normal and constant.

Later Course.—During treatment the patient made a very decided gain, especially in his subjective symptoms. There was no further exacerbations of the symptoms after the second week. His strength and endurance gradually increased, and the patient reported a very marked improvement in his mental activities, the feeling of "grogginess" having disappeared, together with the giddiness which had been troublesome. The general cyanotic appearance of the face and hands was no longer marked, and even the ears, lips and nose had faded to nearly normal color. The dilated venules about the nose were still quite noticeable, however. As already noted, there had been temporary reductions in the number of red cells and in the blood pressure; but the last test showed the hemoglobin to be still in excess of 120 per cent., the red cells 140 per cent., white cells 175 per cent. and blood pressure 125 mm. While the patient felt so much improved physically and mentally that he went home on August 19 to give his business affairs some much needed attention, it is probable the relief was only temporary and his trouble will be gradually progressive. We shall, therefore, endeavor to follow the further history of the case through his home physician.

To summarize the characteristic features of this case on which the diagnosis was based, we have cyanosis, headache, vertigo, general weakness (in this case more mental than physical) marked increase of hemoglobin and red cells and enlargement of the spleen. In this case the enlargement of the spleen was very moderate, being absent at the first examination or so slight as to be overlooked. Dyspnea was not complained of in this case.

IDIOPATHIC EPILEPSY COMPLICATED BY MOTOR APHASIA AND DIPLEGIA, WITH NECROPSY.*

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PHILADELPHIA.

Muscular debility following repeated severe epileptic convulsions may be so marked as to give the impression of true paralysis. It is probably analogous to that described by Todd under the name of "epileptic hemiplegia."

In one of his lectures Todd says:

A patient has a fit, distinctly of the epileptic kind; he comes out of it paralyzed in one-half of the body; generally that side which has been more convulsed than the other or which has alone been convulsed; but the paralysis may occur when both sides have been convulsed equally. The paralytic stage remains for a longer or shorter time, varying from a few minutes or a few hours to three or four days or even much longer. It then goes off, or improves until the next fit, when a train of phenomena precisely similar recurs with like result.

He then goes on to describe eleven cases, and suggests that it is probably caused by exhaustion of the cerebral centers.

As this condition does not seem to be very common, the following case should be of interest. I wish to take this opportunity of thanking Dr. J. K. Mitchell for the privilege of studying and reporting this case, and also Dr. Spiller for verifying my pathologic examinations.

Patient.—A. R., female, aged 14, was admitted to the Orthopedic Hospital and Infirmary for Nervous Diseases, Jan. 22, 1908. Her parents and four brothers were well. The patient was born at full term, after normal labor, weight 7¾ pounds. She developed normally and was perfectly healthy; walked and talked at 1 year; was very intelligent and did well at school. She had measles in May, 1900, and made a good recovery.

Onset of Disease.—During July of this year the patient's family noticed that she was getting nervous, and at times very excitable; she was then sent to the seashore, and while there was very much frightened by seeing a friend in an epileptic convulsion. She returned home in September and seemed well. While she was eating, her arm was struck by one of her brothers, so that the spoon was sharply pressed against the muscles of the right side of the mouth; then there suddenly began a clonic spasm at the point of injury, which gradually extended till all the muscles of the right face were involved. This attack was confined to the right face and lasted only one or two minutes, without loss of consciousness. Three similar attacks occurred at intervals of a month, always apparently brought on by contact of a spoon at the angle of the mouth. During the last attack the right arm was violently

*From the Laboratory of Neuropathology of the University of Pennsylvania.

extended and rotated outward and consciousness was partially lost. Under treatment the patient was free from attacks until August, 1902, when there was a series of six typical nocturnal epileptic convulsions, involving chiefly the right side of the body. For the next year and a half there were a few right-sided convulsions with loss of consciousness. In 1904 attacks became more frequent and more general, the two sides of the body being affected equally, followed by difficulty in talking and with weakness and incoordination of the extremities which lasted a few hours at the time. In July, 1904, after a severe general convulsion, with loss of consciousness, the patient became totally aphasic. From this time on there were many major and minor attacks with increasing weakness of the extremities and incoordination, so that the patient was confined to her bed.

Physical Examination.—The patient lay in bed with a vacant expression, the mouth half open, saliva dribbling from the right side. The pupils were equal and reacted to light and accommodation. Ocular movements seemed normal in all directions. The tongue could be partially protruded, but with difficulty. There seemed to be difficulty in swallowing. The patient could not speak but could make sounds, and understood clearly both written and spoken language. The facial muscles were not paralyzed but contracted sluggishly. Both upper extremities were very weak, but not totally paralyzed. The forearm was partially flexed on the arm and the hand on the wrist, on account of the spasmodic contracture of the flexor muscles, but this could be partially overcome by manipulation. All voluntary movements were restricted, and slowly and laboriously performed with marked incoordination. The tendon reflexes were equal and greatly increased. The muscles of the neck and back were weak. Spasmodic contracture was quite marked in the adductor muscles of the thighs and extensors of the feet. Movements were restricted, weak and incoordinate. Tendon reflexes were equal and much increased. There was a distinct Babinski reflex and ankle clonus on both sides. Sensation for touch and pain was everywhere less than normal. Dr. Langdon reported that the pupils were equal in size and reacted promptly to light and accommodation. The ocular movements were full and equal in all directions. The fundi were normal. Vision was normal. Color fields could not be obtained satisfactorily. Dr. Wood reported that the fauces were congested. Digital examination showed a small adenoid in the vault, no relaxation of palate, and apparent loss of sensation. No evidence could be found of any mass or growth above the larynx which would obstruct respiration. Laryngeal examination was impossible on account of the mental condition of the patient.

Course of Disease.—During the following six weeks, in spite of larger doses of bromid, there were one hundred and thirty-two severe general convulsions, with loss of consciousness. During the interparoxysmal stage, from time to time, the contractures were not so marked and there was slight increase of muscular power, but on the whole there was very little change. Finally the patient developed a severe follicular tonsillitis and died two weeks later of what appeared to be clinically a general streptococcic infection.

Autopsy.—This was performed two hours after death. The brain and spinal cord only were obtained. On removal the brain was moderately soft and the vessels were intensely congested. There was a small amount of straw-colored fluid beneath the meninges. The convolutions were well formed. On section the ventricles were not distended. There was no localized lesion apparent to the naked eye. The macroscopic appearance of the cord showed nothing abnormal.

Microscopic Examination.—With the Weigert method the pyramidal tracts of the spinal cord were slightly paler than normal, but there was not a distinct degeneration of the fibers; with the hemalum and fuchsin method there was no evidence anywhere of inflammation. The blood vessels and pia appeared normal. With the Nissl method there was a moderate chromatolysis of the ganglion cells of the anterior horns. The medulla oblongata, pons and basal ganglia, studied by the Weigert, Nissl, hemalum and fuchsin methods, showed nothing abnormal except for a few scattered minute capillary hemorrhages. Portions of the cortex taken from the motor convolutions of both sides, parietal lobes, Broca's area, frontal and occipital lobes, studied by the same methods presented occasionally a few scattered capillary hemorrhages. The pia here and there showed a slight accumulation of small round cells. No characteristic pathologic change was found and there was no evidence of hypertrophic sclerosis.

I consider that the pathologic examination should be looked on as entirely negative, as the slight changes which were found could easily be accounted for by an infection which in this case was the immediate cause of death.

In many respects this case is unique. Paresis of the extremities and of the muscles of speech was at first slight, but gradually became more profound as the convulsions increased in frequency, till finally there was almost total paralysis of all four extremities with flexure contracture and incoordination and total motor aphasia. When the patient attempted to stand, her legs gave way and the head hung forward. The general appearance was not unlike that in infantile pseudobulbar palsy. All over the body there seemed to be a diminution of pain sense; by some authors this has been attributed to the slowing of associated activities which exists after an attack. Increase of tendon reflexes, with ankle clonus and Babinski reflex, shortly after an attack, has been described by Jackson,[1] Beevor,[2] Vorkastner[3] and Gowers.[4]

During the first few weeks that the patient was under observation it was frequently noted that when the nurse attempted to administer food or medicine, as soon as a spoon was brought in contact with the muscles of the right side of the mouth there immediately began a clonic spasm of the right side of the face, which spread quickly till the whole body was equally convulsed, accompanied with loss of consciousness. Later, after the patient had taken much bromid, the convulsions were confined to the face and consciousness was partially preserved. Finally, after some weeks, direct contact at this area was no longer followed by convulsions. It would seem as if this might fairly be considered an example of that rare variety of epilepsy associated with what has been termed the "epileptogenic zone." Motor irritation over a moderately well-defined area seemed to bring on a convulsion.

An interesting case, presenting somewhat the same phenomena, has been described by Clark,[5] in which motor or sensory irritation over the biceps muscle was followed by a convulsion. Motor aphasia, partial or complete, following epileptic seizures, although uncommon, has frequently been described and is probably due to a condition involving the cerebral centers concerned in articulation, which is similar in character to that which causes the paralysis of the extremities. Cases presenting more or less complete paralysis of one or more extremities following idiopathic epileptic seizures, have been reported by Féré,[6] Voisin, Dutil,[7] Echeverria,[8] Hughlings Jackson,[1] Gowers,[4] Pierce Clark[5] and others.[9]

Although a great variety of lesions have been found in the brains of epileptics, no constant causal pathologic

1. Med. Times and Gazette, February, 1881.
2. Quoted by Gowers.
3. Vorkastner: Diseases of the Nervous System, 1908: Epilepsy.
4. Epilepsy and other Chronic Convulsive Diseases, London, 1881.
5. Arch. Neurol. and Psycho-pathology, 1899, II.
6. Compt. rend. Soc. de biol., 1890.
7. Rev. de méd., 1883, p. 161.
8. Epilepsy, 1870.
9. Todd: Clinical Lectures on the Nervous System, 1856, lecture xiv, Epileptic Hemiplegia.

condition has yet been demonstrated. Todd believed that paralysis following a fit was due to exhaustion of the brain from excessive action; this view has been accepted by Hughlings Jackson and others. Clark, who has had abundant opportunities of studying this subject, says: "It is not necessary to invoke any other state than exhaustion to explain the temporary paralysis in epilepsy."

In the preceding case the persistence of paralysis probably depended on the rapidity with which the fits followed one on another. Negative pathologic findings would be additional evidence in favor of exhaustion as the probable cause of paralysis.

1710 Locust Street.

CANNABIN TANNATE (MERCK).*

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In response to a request of the Secretary of the Council on Pharmacy and Chemistry, I have recently investigated the preparation listed by Merck & Co. as cannabin tannate.

The name of this preparation would naturally lead one to suppose that it is a chemical union (salt) of tannic acid and some basic principle contained in *Cannabis indica*. Whatever the chemical constitution of the substance may be, it evidently contains tannic acid as one of its constituents. This is indicated by the dark blue color imparted to its watery solution on the addition of a few drops of a ferric chlorid solution.

As sold by Merck it is a greenish-brown powder, slightly soluble in water, slowly soluble in alkalies, and possesses a bitter and highly astringent taste. In fact, when applied to a mucous surface it acts much like tannic acid. On account of its bitter astringent taste, tardy solubility, and astringent action on mucous membranes, it is a very unpalatable preparation. Further, its astringent action leads one to doubt whether it can be absorbed from the alimentary tract otherwise than very slowly.

The symptoms most characteristic of cannabis indica intoxication are as follows: first, an apparent stimulation of the psychic functions which has given rise to the more or less romantic literature on this phase of its action; second, a condition of quietness, lack of response to external surroundings and finally sleep. On account of the latter effect the drug has enjoyed a considerable reputation as a hypnotic. Dogs are said to be very susceptible to the influence of the drug, showing a decided narcotic effect. "After a primary ataxia, excitement and nausea and vomiting, the animal tends to fall into a deep and prolonged sleep during which the sensation of pain is much diminished, while the reflexes persist."

An attempt was made to see if any of the symptoms characteristic of cannabis indica could be elicited in dogs by the administration of the preparation under consideration.

EXPERIMENT 1.—Subject, a dog, weight 6 kg. Five grams of cannabin tannate were shaken up in 200 c.c. of water rendered alkaline by the addition of sodium carbonate (only a partial solution resulted). Forty c.c. containing one gram of the drug, were administered by means of a stomach-tube (stomach previously empty) every two hours for four doses. Fifteen minutes after the second dose the animal began to show nausea and soon began to vomit, the vomited matter apparently containing all the drug previously administered. The two subsequent doses were promptly vomited. Aside from the nausea and vomiting, the dog showed none of the other symptoms characteristic of cannabis indica—no ataxia, no psychic stimulation or depression, and no tendency to sleep.

EXPERIMENT 2.—Subject, a dog, weight 8 kg. Five grams of the drug in 100 c.c. of alkaline water were administered by means of a stomach-tube (stomach previously empty). Thirty minutes afterward the animal showed nausea and began to vomit. Apparently everything was vomited up. All subsequent doses were promptly vomited. In this experiment the animal showed no other symptoms characteristic of cannabis indica intoxication—no ataxia, no mental depression and no sleep.

EXPERIMENT 3.—This experiment was carried out on myself as a subject and consisted in the taking by mouth of four doses, each one gram, every two hours. Aside from a very astringent feeling extending from mouth to stomach and some nausea, no other symptoms became manifest. The discomfort in the stomach seemed to be due, in part at least, to the astringent action of the tannic acid.

By way of comment on the results of these experiments, it might be noted in the first place that the only symptom in any way characteristic of cannabis indica poisoning exhibited by the dogs was the nausea and vomiting. Judging from the vomited matter one would be led to think that very little of the drug was absorbed from the alimentary tract. This is what might be expected. Tannic acid alone administered by mouth imparts a like astringent feeling in the stomach and intestines and may result in vomiting and purging. The latter actually occurred in dog 2. If experiments on dogs prove anything at all as to the action of cannabis indica, this preparation exerts no demonstrable hypnotic action, and in man no psychic derangement, either in the form of a stimulation or depression.

Hence cannabin tannate as a therapeutic agent not only exhibits no action similar to that of cannabis indica, but is practically inert. Even if active in such a form, the preparation possesses so many undesirable physical properties as compared with other preparations of cannabis indica as to render it therapeutically superfluous.

*From the Laboratory of Experimental Therapeutics, University of Chicago.

CASE REQUIRING IMMEDIATE NEPHRECTOMY.

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The following case requiring immediate operation came under my observation June 28, 1908:

Patient.—J. M. C., aged 46, farmer, weight, 165 pounds, height 5 feet 7 inches.

History.—The patient was born in Georgia, reared on a farm and has always been in good health, being noted as one of the strongest men of the county. About twelve years ago, while he was walking through the woods with an ax on his shoulder, a falling limb from a tree under which he was passing struck the ax driving it forcibly against the right occipital region, producing a fissure fracture of the vault, accompanied by considerable concussion of the brain. After some weeks' confinement to the house, during which time the patient gradually recovered from what at first appeared to be a very serious brain injury, he again assumed the duties of his farm, having made a complete recovery. Operative measures were not indicated, the expectant plan having been pursued. The patient's health at the time of the injury was good. He had been well for many years, except for a slight disturbance of digestion.

Present Injury.—About 5 p. m., June 28, 1908, the patient was riding a bare-backed horse at full speed down a hard lane,

trying to round up a calf. On making a right-angled turn, he was thrown with terrific force against the ground, the body being doubled on itself on alighting. He made an attempt to get up, but soon abandoned it. Later, by the help of two of his children, the patient managed to get to his house a few hundred yards' distant. I was then summoned.

Examination.—On my arrival, about twenty minutes after the injury, the patient was rolling from side to side of his bed, extremely restless and very pale. His extremities were cold, he was bathed in perspiration and complained of feeling chilly. The pulse was at first imperceptible, but soon became evident, though it was very weak and about 85 a minute. Respiration caused pain, and was, therefore, jerky and restrained. Nausea and vomiting quickly ensued; the patient complained of marked pain about the junction of the eleventh and twelfth ribs with the spinal column and thence to the iliac crest on the right side. All over the right kidney region palpation was painful and the tissues boardlike. The right hypochondrium was also resistant and painful to the palpating hand. The skin was not bruised; there was not even an abrasion to be seen, save on the right side of the face over the malar bone, where an area the size of half the palm was noted. The left wrist was slightly sprained. Further than this nothing was made out worthy of notice. Morphin and strychnin were administered hypodermically to control pain and to quiet the patient. There was no desire to urinate immediately after the injury, but later the patient called for the urinal, only to strain without voiding. One hour after my arrival the man's pulse was 96 and more feeble; vomiting was persistent, the expression bad, and collapse more marked. A catheter was introduced into the bladder, when bright red blood escaped in large quantity. The bladder was next dilated and found to hold water. The kidney region was more resistant by this time, the hardness extending over the whole right abdomen. The patient complained of inability to get his breath and also of great thirst. A diagnosis of ruptured kidney with intraperitoneal hemorrhage was now made and steps toward surgical intervention were taken. Since the patient was in a precarious condition which was hourly becoming worse and more than twenty-four hours removed from well-equipped hospitals, it was determined to operate on him in his home with whatever aid could be readily summoned.

Operation.—It was noon the following day before all preparations were ready. Every hour had witnessed the rapid sinking of the patient; hematuria had continued well marked. A tumor was easily made out above the injured kidney. The abdomen was dull to percussion, painful all over to palpation. Patient was semi-comatose, pulse 140, respiration 10 (due to morphin), temperature 100.6. Vomiting had become more frequent; collapse was well marked. After a rural operating room and equipment had been prepared, there being marked deficiency of instruments and dressings, both in quality and quantity, with the aid of three other physicians, two or three laymen acting as nurses, the patient, now apparently moribund, was placed on the table. The right kidney was hastily exposed by the ordinary lumbar incision. It was found imbedded in and surrounded by blood, its capsule being stripped on by its extravasation. A rent partially dividing the kidney into halves, extending into the kidney pelvis, was made out by the palpating hand. Since the man's condition was such as to demand the quickest possible action, it being necessary to stimulate heroically by strychnin and whisky hypodermically, as well as by normal salt solution intravenously, clamps were placed on the renal vessels, the ureter severed, and the kidney removed. The clots of blood surrounding the kidney having been removed, the cavity was packed with gauze and the wound partially sewed up. As an index to the degree of exsanguination present, I simply mention that it was unnecessary to ligate or clamp a single vessel, save the renals. The patient was then hastily turned on his back and the abdomen opened. The peritoneal cavity contained several hundred cubic centimeters of bloody fluid, which was washed out with normal saline solution. Drainage wicks were again placed, and both wounds dressed. After about twenty minutes' work directed at overcoming the shock, which was alarming in the extreme, the patient was removed to his bed, showing signs of slight reaction.

Postoperative Treatment and History.—Stimulation was kept up and pushed to the point of intolerance. Repeated infusions were given. Slowly response became evident and the pulse gained in tone and rhythm. Urine was soon voided and contained only a trace of blood. There was no postoperative vomiting. The day following operation found the patient in encouraging condition. Mentality was good; the urine was voided in sufficient quantities, and there were no further signs of bleeding. The pulse was fairly strong, regular and running about 100 to the minute. The wounds were draining nicely. There was no evidence of peritoneal inflammation. On the third day the wounds were dressed, clamps removed, and the cavities repacked. Convalescence was at this time well established. The daily output of urine was normal in amount and constituents, save a decided ring of albumin which was explained as "congestive albuminuria" and which soon disappeared. The patient began eating, the nourishment being confined altogether to liquids. The bowels moved normally; the pulse came down to 85; the temperature remained around normal, reaching 100 only twice or three times during convalescence. The man was urged from the first to drink large quantities of water. Notwithstanding this, and the preliminary bladder irrigation, a mild degree of cystitis developed about the tenth day, causing considerable temporary trouble, but was quickly controlled by the use of twenty grains of hexamethylenamin daily, the amount being gradually decreased. This slight annoyance was the only complication noted during the eight weeks indoors. Following this the patient's recovery was uninterrupted and at present almost complete. Daily dressings of wounds witnessed rapid healing. The man was kept in bed for five weeks and then allowed to sit in a reclining chair. At the end of six weeks he was put on his feet. At present he is going about his farm free from pain or inconvenience save a slight weakness of the right side from which he is daily recovering. A small sinus still remains at the seat of incision in the lumbar region, but is rapidly healing. The abdominal wound is well. Now, eight weeks after the injury, the patient presents a most gratifying appearance, his mode of life being little changed from that preceding the fall, save the inability, of course, to perform manual labor.

I want especially to invite attention to the following points in this case:

1. The severity of the lesion found, there being no adjacent structures involved.

2. The apparent absolute indication for operation at once under the handicap of rural surroundings, it being considered impossible to transport the patient alive to the nearest hospital.

3. The absence of infection (although the perinephritic space and peritoneal cavity were both contaminated with urine) to be explained, perhaps, by the early establishment of drainage.

4. The marked albuminuria which developed early after operation, only to gradually disappear as the compensatory action of the sound kidney was established.

Finally I wish to acknowledge my indebtedness to Dr. A. C. Hoyt of Waycross, and to Drs. D. H. Meek and S. L. Vinson of Nicholls, Ga., for most valuable assistance, without whose cooperation in this emergency little worthy of note could have been accomplished.

Prolapse of the Urethral Mucosa in Women.—A. Bertino has found an unexpectedly large number of cases of urethral prolapse on record, with eight from his own experience. The complete form is encountered generally in infants and in climacteric women. He recommends in his study of the subject, in *Ginecologia*, Aug. 15, 1908, excision of the prolapsed mucosa as the best treatment.

ACCIDENTAL OVERDOSE OF PHENOLPHTHALEIN.

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CUBA, N. Y.

For a year past phenolphthalein has been a very popular laxative, and the following experience may be worth reporting:

A few months ago I was called to the country to care for a child, aged 3 years and a few months. On my arrival I was informed that the child had taken twenty-five or more one-grain phenolphthalein tablets of a reliable make. The tablets had been previously prescribed by me, and I am satisfied from investigating the case that the child did take at least twenty-five of the tablets at one dose. The box was full when I prescribed it; only a few tablets had been taken from the box, and the remaining tablets had been taken by the child.

A tube was passed into the stomach ninety minutes after the tablets were taken and four hours after any food had been given the child. The washing was void of results. A few shreds of food were obtained, but no signs of any tablets were noted. The tablets were pink and flavored with wintergreen. There was a faint odor of wintergreen in the washings. Aside from a few fecal actions, the child did not show any effects of the remedy.

Many physicians do not use the remedy because of the fear of systemic effects, due to a possible absorption of the remedy. Authorities seem to agree that the remedy is insoluble in the fluids of the system, and this case supports that opinion.

Therapeutics

HYPNOTICS IV.

SULPHONAL.

Sulphonal is official under the name of sulphonmethanum. It is a synthetic product, and occurs as a crystalline, colorless powder, without odor or taste. It is almost insoluble in cold water, and but slightly soluble in alcohol.

It is a hypnotic, and has no other therapeutic uses. It is not irritant to either skin or mucous membranes, is but slowly absorbed from the stomach, and hence acts but slowly in producing sleep, and the full effect of the drug may not be felt for four or five hours after its ingestion. It also seems to be so slowly excreted that the second dose taken on the following evening will cause a much better and more prolonged sleep than did the first dose. It acts chiefly on the cerebral cortex, and produces a sleep resembling natural sleep, which lasts from six to eight hours. The patient generally awakens without any ill effects, but occasionally there is some dizziness, and a feeling of weakness, or of general lassitude. It does not act on the peripheral nerves, and is not an analgesic. Under its full action the reflexes may be diminished, probably by central inhibition. It has no marked action on the circulatory system, and is excreted in the urine chiefly as ethyl sulphonic acid. When large doses are taken part of it is eliminated by the intestines, and part may be excreted as sulphonal in the urine.

While death has been attributed to 2.0 grams (30 grains) of sulphonal, enormous doses have been recovered from. It is probable that if a patient were otherwise healthy it would take a very large dose of sulphonal to cause death. The symptoms of its overaction are profound and prolonged sleep, with a gradually failing circulation and respiration.

Chronic poisoning is not infrequently noted, either from the careless use of the drug or from an actual sulphonal habit. There is a general loss of strength, gastrointestinal indigestion, often diarrhea, loss of weight, and mental sluggishness, or even symptoms suggesting general paresis. There may be weakness of the legs, disturbed patellar reflexes, and cerebral delusions and illusions, and gradual loss of mental power. From repeated doses, and especially from prolonged use of sulphonal, the kidneys become degenerated, albuminuria occurs, and the urine is of a pinkish or cherry-red color. Although sulphonal may cause an actual hemoglobinuria, this discoloration is due to a decomposition of the hemoglobin of the red blood corpuscles and a production of hematoporphyrin.

Sulphonal even in a single dose, and frequently when doses are repeated, may cause a slight eruption on the skin, either papular or scarlatiniform in character.

The treatment of acute poisoning by sulphonal is to hasten the elimination in every way possible, viz., by purgatives, and by the administration of large amounts of water by the stomach and by the rectum to hasten the elimination through the kidneys. If collapse is present it should, of course, be treated as usual by dry heat and the proper circulatory stimulants.

Chronic poisoning, or the sulphonal habit, requires a long period before health may be restored, and it is doubtful if the kidneys ever become again perfect. Sleeplessness must be combated by some drug other than a synthetic product. General tonics, forced feeding, massage, hydrotherapy, and fresh air, should all be utilized in restoring the patient to health, and such treatment and diet should be instituted as is conducive to restoring irritated or damaged kidneys to normal.

Sulphonal may be selected as a safe hypnotic in ordinary insomnia. It will not combat pain, and it is not sufficiently depressant to prevent its use in ordinary weak conditions of the circulation. It has been used considerably in the insomnia of insanity, but the dose required for this purpose is large. It should be remembered that repeated doses on successive days have an increasing hypnotic effect, at least for a time. If taken for a long period, however, it does cause prostration and muscle debility and a lack of appetite. Also, there is the same danger of forming a habit from this drug as from any other hypnotic. It has been used in the deliriums of acute febrile diseases, and often is efficient and valuable. It is frequently used in alcoholic deliriums, but is not so efficient as chloral or paraldehyd. It has been employed in spasmodic conditions as in chorea, epilepsy, and muscle cramps, but other drugs are better for this purpose.

The drug acts so slowly that it is not advisable in ordinary insomnia to repeat the dose on the same night. Consequently the dose selected should be sufficient to produce sleep. This is ordinarily 1.0 gram (15 grains), best administered in powder, and drunk with hot water or hot milk at least four hours before bedtime. If the sulphonal is to be repeated on successive nights, less than the above dose will generally prove efficient.

If sulphonal is given for sleeplessness and delirium during an acute disease, a smaller dose, as 0.50 gram (7½ grains) should be given, which can be repeated in five hours if the first dose does not cause sleep. It may be ordered as follows:

℞ gm.
Sulphonmethani ..... 5| or gr. lxxv
Fac chartulas. 5.
Sig.: One powder, with a glass of hot milk, at 5 p. m.

TRIONAL.

Trional is official under the name of sulphonethylmethanum, and is a synthetic product chemically similar to sulphonal, which occurs as colorless crystals, without odor, and of a bitter taste. It is readily soluble in alcohol, and slightly soluble in water.

Trional is not irritant to the skin or mucous membranes, and, being more soluble than sulphonal, is more quickly absorbed from the stomach, and consequently shows its hypnotic action sooner. It causes sleep, generally within an hour, which lasts about six hours. Its physiologic action is similar to that of sulphonal. It is excreted by the kidneys, and can cause the same discoloration of the urine as described under sulphonal. It is as little liable to cause acute cardiac depression or acute poisoning as is sulphonal, but prolonged use can cause the same chronic debility and kidney irritation.

The treatment of acute poisoning, or chronic poisoning, or a trional habit, is the same as described under sulphonal.

Its only use is as a hypnotic, and under the same conditions as those for which sulphonal is prescribed. It has been thought that it would cause less disturbance, as it acts more quickly and in a smaller dose than does sulphonal.

The usual dose of trional is 0.60 gram (10 grains), best administered in capsules, with a glass of hot water or hot milk, an hour before bedtime, as:

℞ gm.
Sulphonethylmethani ..... 3| or gr. xlv
Fac capsulas, 10.
Sig.: Two capsules, with hot water, an hour before bedtime.

ACUTE INFLAMMATIONS OF THE THROAT.

It is now well known that almost every acute inflammation of the pharynx and tonsils is due to one or more germs, the diphtheria bacillus, the streptococcus, the staphylococcus, the influenza bacillus, or the pneumococcus. While the secondary appearance in the throat, after one or more days, is ordinarily distinctive in diphtheria and streptococcus infections, it is not distinctive in the other infections, and may not be in these. Also in the first few hours of the inflammation they are clinically indistinguishable, although bacteriologic examinations may show the germ causing the primary infection. The systemic symptoms also are not distinctive in the primary stages; consequently the attempted abortive local treatment is the same with every throat inflammation. Also, whatever the germ proves to be, and whatever the general systemic treatment is, the continued local treatments are not dissimilar.

In primary infection, especially of the tonsils, antiseptic gargles, sprays and applications may abort the disease. This is before the germs have invaded deeply the tonsillar crypts. At this stage Dr. J. L. Goodale, Boston (*Boston Medical and Surgical Journal*, June 25, 1908), has shown that strong antiseptic gargles or sprays are both non-curative and not advisable, as tending to inhibit local leucocytosis and consequently phagocytosis. He also shows the inadvisability and the actual harm that may be caused by attempting to clean out the crypts of dead bacilli and to inject an antiseptic deeply into the parts of the tonsils to which the bacilli have migrated. In a word, he has shown satisfactorily the uselessness and the positive harm from such energetic measures. If such burrowing collections of bacilli can not be combated, and localized suppurations prevented by the leucocytes, we can not prevent such suppuration by local antiseptic applications. It does not seem wise, however, to abolish antiseptic gargles entirely. Such antiseptic mouth washes as are not irritant and do not destroy healthy tissue must tend to keep the infection from spreading from one part to another and to keep it localized. This is certainly observed constantly in practice. We may not prevent an infection developing in the other tonsil, but we can limit it, and under treatment the second tonsil rarely becomes so seriously affected as the region of primary infection.

Consequently, every acute primary infection of the throat should be treated with a warm, simple antiseptic gargle followed by a warm, physiologic saline or bland alkaline wash, and this should be repeated at intervals of from an hour and a half to three hours, depending on the character of the infection. There seems to be no doubt that the most universally useful antiseptic mouth wash or gargle is a diluted peroxid of hydrogen solution. The official solution (aqua hydrogenii dioxidi), which should be fresh, should be diluted with four or five parts of warm water and used as a gargle every three hours, this to be followed in from one to two minutes by a cleansing solution of either physiologic saline solution (½ teaspoonful of salt to a glass of warm water) or with the liquor antisepticus alkalinus (N. F.), diluted with equal parts of warm water. In an hour and a half after this gargle a boric acid solution of about 2 per cent. should be used as a gargle and mouth wash, and this should be repeated every three hours. In other words, the peroxid (and the cleanser) and the boric acid should alternate every hour and a half during the daytime and every three hours during the night. Such early antiseptic treatment will abort many cases of throat inflammation. And if the inflammation be not aborted, such treatment will cleanse the throat and give mild antisepsis throughout the whole course of the disease. If there is no evident exudate, or if there is considerable pharyngitis, a potassium chlorate solution could be substituted for the boric acid solution, but the antiseptic peroxid of hydrogen should not be omitted. As soon as the infection begins to subside the gargling should be gradually less and less frequent.

Unusually Large Doses of Antitoxin.—At the Alameda (Cal.) County Medical Society, was recently presented by Dr. W. A. Clark (*California State Journal of Medicine*, September, 1908, p. 320), a report of a case of ruptured extrauterine pregnancy complicated with diphtheria, in which large doses of antitoxin were used. The woman was operated on, on May 18, 1908. The temperature rose to 104 on the 19th, with a pulse of 158 and respirations 44. The temperature gradually fell to May 22, when it was 99.5, but the pulse never fell below 140. A sore throat was then complained of and was found to be a typical diphtheritic throat, which was confirmed bacteriologically. Between May 23 and June 8, diphtheria antitoxin was administered in daily amounts, varying between 11,000 and 80,000 units. The wound became superficially infected in the course of the case. The throat became clear on June 8. Patient made a slow convalescence, having received in the course of this case 555,000 units of diphtheria antitoxin.

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SATURDAY, NOVEMBER 21, 1908.

THE CLINICAL SIGNIFICANCE OF QUANTITATIVE VARIATIONS IN CATALASE.

A recent article by Winternitz and Meloy[1] on the occurrence of catalase in human tissues, and its variations in diseases, leads us to review briefly the work already done with this ferment, especially on account of the possibilities of its clinical application.

Schoenbein observed in 1863 that aqueous extracts of various vegetable and animal tissues were capable of decomposing hydrogen peroxid with the evolution of oxygen, and ascribed this phenomenon to the various soluble ferments present in the organisms. The property was regarded as common to all enzymes until Loew, in 1901, showed that it belonged to a specific enzyme of universal occurrence in living organisms. This investigator succeeded in isolating this ferment from its companions and called it catalase. At first it was supposed that catalase played an active part in the oxidizing processes of the body, but the researches of Traube, and later those of Kastle and Loevenhart (1903), as well as the studies of Schaffe (1905), indicate that the oxygen liberated from the peroxid is, in all probability, in the molecular rather than in the atomic state, and is, therefore, relatively inactive in oxidizing processes. In 1905 Jolles and Oppenheim made some observations on the catalytic activity of pathologic tissues and advanced the theory that in the group of diseases which are characterized clinically by coma, such as diabetes mellitus, nephritis, icterus and eclampsia, there is retained in the blood a catalase-inhibiting substance, and that the symptoms are due, not to the retention of specific substances, but to the lack of oxidation in the tissues.

Winternitz and Meloy, who have studied the catalytic activity of tissues after death, and in some cases that of the blood during life, are unable fully to agree with this theory. In the cases of nephritis which they report, all the tissues, including the blood, showed a marked reduction in their catalytic activity. The renal tissue suffered the greatest loss of power, the loss being apparently in proportion to the extent of the renal lesions. But in their two cases of eclampsia there was no reduction in the power of the blood to decompose hydrogen peroxid, nor was this power diminished in the blood of a patient with diabetes mellitus, dying in coma. In other diseases studied, such as tuberculosis and pneumonia, the variations in catalytic activity were not greater than might be expected from the anemic or congested condition of the viscera, with exception of the organs taken from a subject of congenital syphilis and the blood from a man poisoned with carbon monoxid gas. In these two instances marked reduction in catalytic activity was demonstrated.

While these studies make only a beginning in an important field, the results thus far obtained will doubtless stimulate further work along this line, and it seems likely that they will develop facts which will be of value to the clinician.

1. Jour. Exp. Med., 1908, x, 759.

THE CHARACTER OF STATE BOARD EXAMINATIONS.

The essential purpose of medical education is to train men to be of service to the community in combating disease. The majority of these men will be concerned with disease in the individual; a small minority, whose work is daily becoming more important, will be concerned with disease in its relation to the community. Very properly the state seeks to protect its people, who for the most part are incapable of judging, from the evils of medical ignorance and incapacity. To this end it refuses to accept the certificates of medical schools regarding qualification and demands that the candidate shall come before a non-partisan body to demonstrate his fitness to practice medicine. No one doubts the good which has been accomplished by these state examinations in elevating medical standards and improving the quality of medical education. Under the present methods of examination much has been accomplished, but much more remains to be done, which can be accomplished only by a change in the character of the examination.

A large part of the education of the medical student has to do with subjects which, though important in training, do not immediately bear on the questions which arise in connection with the patient—with his every-day practice. They serve an important purpose in providing the foundation on which the purely clinical study is built, and the broader and firmer the foundation the stronger will be the superstructure. These studies have often been termed the scientific, as opposed to the practical branches of medical education. In the past greater importance was attached to these studies than at present, because then they afforded the only opportunity for the indispensable scientific discipline, whereas now with the introduction of laboratory methods into the clinic the same discipline is provided there.

It is a mistake that so large a part of the examination by the state boards should be directed toward ascertaining the candidates' knowledge in these preliminary studies. This arises from a misconception of

the purpose of the state examination. That purpose is not to determine the character of the education which the candidate has received, but whether or not, whatever the character of the education, he is well fitted to serve the community in a medical capacity.

How can that be determined? Certainly not by a series of questions and written answers. Any one with much experience in teaching knows the inadequacy of the method. An examiner can ask only a certain number of questions in any subject. The character of the questions and the answers desired is determined largely by the interest of the examiner in certain parts of the subject. Under the present methods of education, both general and professional, written examinations figure so largely that training in passing examinations has become an important part of education. The passing of examinations is greatly facilitated by the use of compends in which all possible questions on all subjects are collated with their respective answers. After a month or two of close study of such a book an individual of ordinary intelligence can pass any state board examination. There is the further danger in such a method of examination that medical schools direct their energies toward the training of their students to pass examinations rather than to acquire knowledge of positive practical value in the work to which they expect to devote their lives.

The examination should be wholly, or at least for the greater part, practical. The candidate should be required to show his ability to do things instead of being asked to write about them. He should show his familiarity with modern clinical laboratory methods and his ability to apply these methods to the individual patient; his ability to make proper diagnoses and indicate the treatment; his ability in surgical diagnosis and in surgical technic. The applicant, therefore, might be required to recognize various forms of bacteria; make examinations of blood, sputum and urinary sediments; perform operations on the cadaver and even to make examinations of patients, make diagnoses and prescribe treatment.

It is not necessary to indicate the manner in which these practical examinations should be carried out. They will doubtless involve more care and the giving of more time by the state examiners. The facilities for such examinations will certainly vary in different parts of the country, and their character will vary with the facilities. It is absurd to say that such examinations can not be given in America when they are given in every other country. The most important thing is the recognition of the principle that the essential purpose of the examination by state boards is to see that the candidate has been adequately prepared by practical training and experience to give the public useful service in a medical capacity, and that this can be determined only by the demonstration by the candidate of such ability.

THE UNTEACHABLE CONSUMPTIVE.

The antituberculosis campaign in this country has passed through several stages. At first the greatest stress was laid on educational propaganda, by means of pamphlets, popular lectures and exhibitions. Later, it became clear that this method of instruction reached only a limited part of the community and that practical education must be added. Those who suffer most from tuberculosis, the very poor, do not read pamphlets or attend lectures and must be given personal instruction and practical demonstrations. Efforts were then directed toward the founding of special dispensaries and the supplementing of the physician's work by visiting nurses and charity workers. Much good has undoubtedly been accomplished by these agencies, but it seems that we are beginning to recognize the limitations of practical education also and to inquire what we are to do with the absolutely unteachable class.

The successes and failures of a careful system of practical instruction of consumptives were well shown at the International Congress on Tuberculosis in the interesting exhibit of the Visiting Nurses' Association of Baltimore. These nurses visit and instruct consumptives in their homes, their work being naturally among the poorest class. They state that below a certain level education is impossible. A few essential precautions may sometimes be introduced into a poor and ignorant family, but they are not sufficient for the prevention of infection, and there remain always a large number of people who are incapable of appreciating the dangers of infection and of making the sustained efforts required to guard against it. One of the nurses, Miss Lamotte, gave as a result of her personal experience the following figures: She visited about 1,160 patients of the poorer classes and endeavored to instruct them how to avoid infecting others. She found only nine who were capable of taking adequate precautions; 143 were fairly but not sufficiently careful, 719 were careless, and 289 were flagrantly careless. In such cases the nurse, having done all she could in the way of persuasion and warning, had no further resources and was forced to witness the gradual infection of the other members of the family. Charts and photographs in this exhibit showed these results graphically; e. g., an unteachable consumptive father infecting his four children and his wife. These nurses ask the pertinent question: "Would not the forcible segregation of dangerous consumptives be justifiable as a measure of public health? The community insists on certain precautions being observed in the acute infectious diseases; should not this surveillance be extended to tuberculosis?"

The New York City Department of Health has justly earned the admiration of the world, and no part of the work of this department is more admirable than that which deals with the unteachable consumptives. The obstinate, ignorant patient who rejects instruction and remains a source of danger to his environment is re-

moved to the department's hospital at North Brother Island, where he is rendered harmless and at the same time given a better chance of prolonging his life. The apparent harshness to the patient, "wresting a dying man from his family," is more than justified by the benefit to his family or housemates.

THE SPECIFICITY OF COMPLEMENT FIXATION.

The reaction known as complement fixation is supposed to depend essentially on the fact that if to a hemolytic serum there be added a suitable serum containing antibody and a second constituent, namely, the corresponding antigen, an interaction occurs by which the complement of the lytic serum is fixed so that the latter is rendered incapable of producing hemolysis.

Wassermann applied this as a diagnostic method in syphilis, using as antibody the serum of syphilitics and as antigen extract of liver of a still-born luetic child. At first regarded as a specific reaction, and still believed to be so by many, doubt has been cast on this point by the fact that extracts of normal organs may serve as antigen much as do those of syphilitic tissues, thus indicating that the reaction is not one in which antigens and their specific antibodies take part.

Of the great amount of work recently done along this line, results for the greater part indicate that the serum of luetics gives a reaction which is not obtained with that of normal individuals. However, other diseases also give similar reactions. Thus the Wassermann reaction has been repeatedly obtained, both in yaws and trypanosome infections; with other diseases, notably scarlet fever, various investigators differ considerably in their results. Much and Eichelberg also report a positive Wassermann reaction in 40 per cent. of the scarlet fever cases tested by them, while more recently others get uniformly negative results. Seligmann and Klopstock, indeed, explain the positive reaction obtained by the earlier workers as the result of the use of antigen that had undergone partial decomposition. Wolff-Eisner and Ascher recently tested the serum of patients with active tuberculous lesions for a complement fixation reaction, using as antigen different preparations of tuberculin. They obtained practically uniformly positive results, but, on the other hand, got equally positive results with sera of sufferers from syphilis, pneumonia, typhoid and epidemic cerebrospinal meningitis, still using tuberculin as antigen. Sera of normal individuals, however, constantly gave negative results.

From this it would appear that the complement-fixation reaction, at least with certain antigens, can not be considered a specific one. The practical value of the Wassermann reaction perhaps is only little affected by this demonstration, inasmuch as its greatest applicability is in the differentiation of those cases of lues in which active symptoms are absent.

THE NEW SURGEON-GENERAL OF THE ARMY.

Surgeon-General O'Reilly will retire for age on January 14 next. In his last annual report he takes occasion briefly to review the policies he has pursued and the results accomplished. It has been his aim to have the recommendations of the Dodge Commission, which investigated the conduct of the Spanish-American War, carried into effect as far as they relate to the medical department. Thus there have been obtained a larger force of commissioned medical officers and the nucleus of a reserve corps, an active corps and a reserve corps of trained female nurses and provision for a volunteer hospital corps in time of war. These are but some of the notable improvements which have characterized his able administration.

Col. George H. Torney, Medical Corps, U. S. Army, who has just been designated by the President to succeed Surgeon-General O'Reilly on the latter's retirement, is one of the most efficient medical officers of the Army and his appointment is considered a good one, insuring a continuance of the able and progressive administration of his predecessor. Colonel Torney was born in 1850 and will, therefore, have about five and one-half years to serve as surgeon-general before his retirement. Appointed as first lieutenant and assistant surgeon in 1875 and passing through all the grades, he reached that of colonel on April 23, 1908.

Colonel Torney's service has been long and brilliant. At the beginning of the Spanish-American War he was charged with fitting out the hospital ship *Relief* and commanded her during the period of the evacuation of the sick and wounded from Cuba and Porto Rico. After the war he served as commanding officer successively of the Army and Navy General Hospital, Hot Springs, Ark.; of the First Reserve Hospital in Manila, and of the Army General Hospital, Presidio of San Francisco, and as chief surgeon of the Department of California. During the period of the San Francisco earthquake Colonel Torney was put in charge of the sanitary work in that city and by his ability and energy won the highest commendation from his superiors for the success with which he handled the difficult situation under his charge. The Medical Department of the Army and the Army itself are to be congratulated on the new Surgeon-General.

THE TREATMENT OF PERNICIOUS ANEMIA.

The tendency at the moment is to assume that the substances known as hemolysins are the cause of pernicious anemia. It has long been known that grave anemias may depend on certain worm invasions, carcinoma or on atrophies of the mucous membrane of the stomach and intestines. Hemolysins can be isolated from the bodies of parasitic worms, from carcinomatous tissues and from the normal mucous membrane of the stomach and intestines and with such hemolysins anemias can be produced experimentally in animals. Similar

to the action of these hemolysins is the hemolytic effect of the cobra lecithid of Kyes (a combination of lecithin with cobra poison), and Morgenroth and Reicher have produced grave anemias in animals by injection of this substance. In addition, they have made the interesting observation that if cholesterin dissolved in oil be administered to the animal simultaneously the anemia may be prevented. They assert that they have also demonstrated that experimental anemias in animals, even after they have been produced, are benefited by administration of cholesterin. It has been suggested, therefore, that pernicious anemia in man be treated in a similar way. A 3 per cent. solution of cholesterin in oil is prepared and 100 grams of this administered daily. A preliminary report has been made by Reicher,[1] who obtained good results in two cases, a temporary improvement in one and no benefit in a fourth. It may be worth while, for those who have opportunity, to try the effects of this medication. Certainly a large number of cases would have to be treated and the results carefully analyzed before any definite statements of value regarding beneficial effects could be made. In pernicious anemia there are such marked remissions at times under various forms of treatment (and sometimes without any treatment) that physicians require to be unusually cautious in estimating the value of therapeutic procedures in these conditions. We give the observations of Reicher without further comment, and shall watch with interest for further reports.

THE MARRIAGE OF EPILEPTICS.

Several states have laws forbidding the marriage of epileptics, and it would be of interest to ascertain how thoroughly such laws are enforced. Kansas seems to be one of the states with such a law, but, judging from the report[2] of Dr. M. L. Perry, superintendent of the State Hospital for Epileptics, it appears that the law is practically a dead letter. He finds that in the institutions under his charge 30 per cent. of the male epileptics over 21 years old are married and 25 per cent. were married after the disease had developed. Of the female epileptics over 18 years of age, 56.8 per cent. were married and 40 per cent. had married since they became epileptic. In Perry's opinion the disease is largely hereditary, and the children of these marriages are particularly liable to inherit their parents' disease. He makes a plea, therefore, that the existing law against the marriage of epileptics be so amended as to make it more effective in future. He would have a penalty attached to failure on the part of any licensing official to investigate thoroughly the legal qualifications in this respect before issuing a marriage license. It is not hard to understand how the enforcement of such marriage regulations might be difficult. Epilepsy is a symptom of brain instability that is liable to be transmitted to offspring in some form or other, but it is by no means always easy to detect, especially if there are strong motives for concealing it. Moreover, in some of its forms it may even be unsuspected by the sufferer himself, especially in the ignorant and unintelligent. The fact that the law has not been enforced in Kansas, a state that, more than others perhaps, is tolerant of experiments in practical eugenics, makes it seem probable that a like condition of affairs would be found to exist in other states where such laws have been enacted. It is not desirable that epileptics should propagate their defects, but it will require the most conscientious execution of rigid statutes to prevent it.

1. Berl. klin. Wchnschr., Oct. 19, 1908; abstracted in this issue THE JOURNAL, p. 1824.
2. Third Biennial Report of the Parsons State Hospital for Epileptics.

Medical News

ILLINOIS.

Personal.—Dr. John J. McIntosh, Allendale, has been elected coroner of Wabash County.——Dr. Elijah G. Davis, Fairfield, has retired from practice.

Fire in Sanatorium.—A fire in the Hinsdale Sanatorium November 11 destroyed the living quarters of the nurses and other employés and caused a loss of $5,000.

Contribution to Sanatorium.—Mrs. Keith Spaulding has given $18,000 for the construction of a new medical building for the Edward Sanatorium, Naperville. This will provide accommodation for 25 additional patients.

New Cottages at State Hospital.—Two new cottages, erected at the Illinois Hospital for the Insane, Bartonville, at a cost of $100,000, and equipped with eight solaria for the continuance of the work of phototherapy inaugurated by Superintendent Zeller, will be dedicated Thanksgiving Day. The solaria are equipped, two in ruby, two in violet, two in amber, and two in opal.

Smallpox.—Nearly 100 cases of smallpox were discovered in the southern part of Fulton County and in the northern part of Schuyler County, November 7, by Dr. E. F. Baker, inspector of the State Board of Health.——Dr. J. C. Westervelt, inspector of the State Board of Health, on a tour of inspection in Jefferson County, found 9 cases of smallpox near Dix, and placed nineteen families under quarantine.

Alumni to Meet.—The Cook County Hospital Alumni Association will hold its forty-seventh annual meeting November 23, at the Illinois Athletic Club, Chicago, under the presidency of Dr. Samuel C. Plummer. The program includes addresses by Dr. William E. Quine on "Nicholas Senn as a Man;" by Dr. William L. Baum on "The New County Hospital;" by Dr. Arthur B. Eustace on "Our First Regular Resident Staff," and by Dr. Theodore Tieken on "The County Hospital as a Field for Scientific Work."

Society Meetings.—At the annual meeting of the Fox River Valley Medical Society, held in Aurora, November 10, the following officers were elected: President, Dr. Hiram T. Hardy, Kaneville; vice-president, Dr. Edward H. Abbott, Elgin (re-elected); secretary-treasurer, Dr. George F. Allen, Aurora (re-elected); censor, Dr. James A. Rutledge, Elgin (re-elected); delegate to the State Medical Society, Dr. James W. MacDonald, Aurora, and alternate, Dr. George F. Allen, Aurora.——At the annual meeting of the Southern Illinois Medical Association, held in Murphysboro recently, the following officers were elected: President, Dr. George S. Rainey, Salem; vice-presidents, Drs. Oscar B. Ormsby, Murphysboro, and William S. Wiatt, East St. Louis; secretary, Dr. Charles W. Lillie, East St. Louis; treasurer, Dr. Alexis T. Telford, Olney. The next meeting will be held in East St. Louis.

Chicago.

Isolation Hospital to Open.—The new Isolation Hospital for the care and treatment of diphtheria and scarlet fever patients will, it is expected, be ready to receive patients November 23.

Contagious Diseases.—There was an increase of 64 cases of contagious disease for the week ended November 14, as compared with the preceding week. To the total of 671 cases reported, diphtheria contributed 237; scarlet fever, 196; tuberculosis, 142; typhoid fever, 63; measles, 56; chickenpox, 34; pneumonia, 24; whooping cough, 16, and diseases of minor

importance, 23. As compared with the preceding week there were 107 more cases of tuberculosis, 50 more of diphtheria, 20 more of typhoid fever, and 15 more of scarlet fever.

Deaths of the Week.—There were 565 deaths reported to the department of health during the week ended November 14, an increase of 26 over the preceding week and of 40 over the corresponding week of last year. As compared with the corresponding period of 1907, there is a decrease in prevalent illness in individuals under twenty years, but an increase among adults over twenty. There were fewer deaths from pneumonia, typhoid fever, convulsions and acute contagious diseases of children. The department gives one word of advice for the avoidance of pneumonia—ventilate. During the week consumption caused 71 deaths; pneumonia, 62; heart diseases, 59; nephritis, 50; acute intestinal diseases, 48; violence (including suicide), 45; diphtheria, 18; scarlet fever, 11; typhoid fever, 7, and measles 2 deaths, and whooping cough and influenza each 1 death.

INDIANA.

Personal.—Dr. Apollos F. Phillips, Corunna, has returned from Europe and will practice in Fort Wayne.——Dr. Marion Goss, Rockville, is reported to be seriously ill.——Dr. Helene Knabe, Indianapolis, head of the state bacteriologic laboratory, has resigned to take effect December 1. Dr. J. P. Simmonds, St. Louis, is announced as Dr. Knabe's successor.

Society Meetings.—At the annual meeting of the Ninth Councilor District Medical Association, held in Crawfordsville, November 10, the following officers were elected: President, Dr. Charles Chittick, Frankfort; vice-presidents, Drs. John C. Webster, Lafayette, and Samuel L. Ensminger, Crawfordsville; secretary, Dr. George F. Keiper, Lafayette; assistant secretary, Dr. Royal H. Gerard, Crawfordsville, and treasurer, Dr. Frederick A. Tucker, Noblesville. The association resolved to use all diligence in securing the passage of a law looking to the inspection of school children. A banquet was served in the evening at the Masonic Temple, at which Dr. Warren H. Ristine, Crawfordsville, acted as toastmaster. Noblesville was selected as the next place of meeting.——Elkhart County Medical Society held its annual meeting in Elkhart November 5, when Dr. Fred N. Dewey, Elkhart, was elected president; Dr. Herbert K. Lemon, Goshen, vice-president; Dr. Allen A. Norris, Elkhart, secretary; Dr. Hannah O. Staufft, Elkhart, treasurer; and Dr. Daniel L. Miller, Goshen, censor (re-elected).

IOWA.

Pasteur Institute.—A State Pasteur Institute has been established at Iowa City, under the direction of Dr. Henry Albert, state bacteriologist.

Tuberculosis Lectures.—Rev. Aretas E. Kepford, state lecturer on tuberculosis for the State Board of Control, began a series of lectures on "Tuberculosis" at Cedar Rapids, November 5.

Health Officers Elect.—At the meeting of the Iowa Association of Health Officers, held in Des Moines October 16, Dr. Marcus C. Terry, Brighton, was elected president; Dr. Andrew J. Swezey, Decorah, vice-president, and Dr. Fred Albert, Mason City, secretary-treasurer.

Personal.—Dr. J. L. Sawyers, Centerville, sailed for Europe October 28.——Dr. William P. Hombach, Council Bluffs, who recently underwent a serious surgical operation at Wise Memorial Hospital, Omaha, has recovered and resumed practice.——Dr. Alexander W. Trout, Perry, was struck by a slowly moving engine November 4, fracturing two ribs and dislocating a clavicle.

KENTUCKY.

New Quarters for Medical Library.—The Jefferson County Medical Library has outgrown its present quarters and is about to move into apartments of larger accommodation in the Atherton building. The number of books in the library now exceeds 5,000, and the library is open from 10 a. m. to 9 p. m. daily.

Personal.—Dr. H. C. White, Latonia, recently elected physician at the Kenton County Infirmary, has assumed charge of the institution.——Dr. Charles J. Kehm has succeeded Dr. George W. Brown as health officer of Newport.——Dr. Daniel A. Campbell, Bowling Green, has been appointed first assistant physician at the Western Kentucky Asylum for the Insane, Hopkinsville.

University of Louisville Medical Department.—The first session of the consolidated medical schools, the University of Louisville, was opened Monday, November 16, in the lecture room of the former Louisville Medical College, at First and Chestnut streets. The opening exercises were presided over by the president of the medical faculty, Dr. James M. Bodine, and addresses were made by the mayor and Dr. Joseph M. Mathews, president of the State Board of Health. Particular attention has been paid to the laboratories, and trained men have been secured, who will devote their entire time to the work. Dr. Cyrus W. Field, New York City, is professor of pathology, bacteriology and hygiene, and Dr. J. A. McCracken, Bowling Green, is director of the laboratory of physiology, histology and embryology. Dr. Carl H. Weidner, Louisville, will have charge of the laboratory of clinical pathology. All of the laboratories, except that of clinical pathology and anatomy, will be conducted at the First and Chestnut streets building; the clinical pathology laboratory, at the Clinical building, on Sixth street, and dissection at the old University building, at Eighth and Chestnut street. Enthusiastic support is given the dean, Dr. Thomas C. Evans, by the executive committee and the combined faculties in every department.

MARYLAND.

New Medical Library.—It is announced that the cost of the new library building for the Medical and Chirurgical Faculty of Maryland will be $88,000, and of this about $63,000 has already been subscribed. An urgent appeal is being made for the balance. Wealthy citizens are being asked to endow rooms in the building to be known under their names.

Personal.—Dr. George R. Graham, Baltimore, is reported to be critically ill with pleuro-pneumonia.——President Ira Remsen of Johns Hopkins University has resigned the directorship of the chemical laboratory, which he has held since the foundation of the University in 1876.——Dr. George F. Nickerson has purchased "Brookletts," the home of the late Dr. John C. Earle, near Easton.

County Society Meeting.—At the annual meeting of Worcester County Medical Society, held in Snow Hill, October 27, the following officers were elected: President, Dr. John S. Aydelotte, Snow Hill; vice-president, Dr. Samuel S. Quinn, Stockton; secretary, Dr. R. Lee Hall, Pocomoke City; treasurer, Dr. John L. Riley, Snow Hill; alternate delegate, Dr. John D. Dickerson, Stockton; and censor, Dr. John W. Pitts, Berlin.

Psychiatric Society Organized.—At the Shepperd and Enoch Pratt Hospital, Baltimore, November 6, the Maryland Psychiatric Society was organized, composed of persons interested in the care and treatment of the insane, and in measures intended to secure better care for those so afflicted. Dr. Henry M. Hurd presided and Dr. William R. Dunton, Towson, acted as secretary. The following committee was appointed to represent the society in such matters as might properly come before the state lunacy commission: Drs. Edward N. Brush, Towson, Percy Wade and J. Clement Clark.

Academic Day.—The first academic day celebrated by the University of Maryland occurred November 11. The day marked the one hundred and nineteenth anniversary of the opening of St. John's College, Annapolis, which embodies the departments of sciences and arts of the university. Drs. Arthur M. Shipley and H. C. Brent acted as marshals. The distinctive features of the exercises were the address by President Charles W. Needham, of George Washington University, on "Efficient Men, the Aim of University Training;" the unveiling of a memorial tablet to the late Major James Carroll, which bore the following inscription:

JAMES CARROLL,
M.D., 1891, and LL.D., 1907.
Major and Surgeon, U. S. Army.
Born in Woolwich, England, June 5, 1854.
Died in Washington, D. C., Sept. 16, 1907.

As a member of the Army Commission, which succeeded in demonstrating the mode of conveyance of yellow fever, he became an eminent contributor to science by his investigation, and a heroic benefactor of his country and of mankind by voluntary submission to the bite of an infected mosquito, whereby he suffered from a severe attack of yellow fever produced for the first time by experiment.

Greater love hath no man than this, that a man lay down his life for his friends.

Erected by the regents of the University of Maryland;

the address by Dr. William H. Welch on "The Heroic Work of Major Carroll on the Army Yellow Fever Commission," and the conferring of the honorary degree of LL.D. on Dr. Thomas Edward Satterthwaite, of New York City.

Hospital Dedicated.—The Marie Bloede Memorial Hospital at Endowood Sanatorium for Consumptives was dedicated

November 10. The speech of presentation was made by Mr. Victor Bloede, and Dr. Henry Barton Jacobs, president of the institution, accepted the building. Addresses were made by the governor, the mayor of Baltimore, the judge of the supreme court, and Dr. Lawrence F. Flick, Philadelphia. The new building will accommodate 30 patients, and was erected by Mr. Bloede at a cost of $25,000 on the condition that a maintenance fund be raised. As a result of a public appeal $5,356.26 has thus far been collected.

MINNESOTA.

Society Meetings.—At the annual meeting of Chisago-Pine Counties Medical Society, held in North Branch, Dr. Thomas Zeien, North Branch, was elected president; Dr. Horace G. Murdock, Taylors Fall, vice-president; Dr. Christopher A. Anderson, Rush City, secretary, and Dr. Herman W. Froehlich, Pine City, treasurer.——At the annual meeting of the Mower County Medical Society, held in Austin, October 21, the following officers were elected: President, Dr. Clifford C. Leek; vice-president, Dr. Charles F. Lewis; secretary, Dr. Olof H. Hegge, all of Austin; treasurer, Dr. George J. Schottler, Dexter; censor, Dr. Frederick W. Schlutz, Waltham, and delegates to the state society, Drs. Willis F. Cobb, Lyle, and Ralph S. Mitchell, Grand Meadow.

State Society Meeting.—At the annual meeting of the Minnesota State Medical Association, held in St. Paul, October 7 and 8, the following officers were elected: President, Dr. Cornelius Williams, St. Paul; vice-presidents, Dr. Charles W. More, Eveleth; Martin L. Mayland, Faribault; and Leonard C. Weeks, Detroit; secretary, Dr. Thomas McDavitt, St. Paul (re-elected); treasurer, Dr. Richard J. Hill, Minneapolis (re-elected); councilors, Drs. Alfred E. Spalding, Luverne, sixth district; Adolph O. Bjelland, Mankato, eighth district; and John L. Rothrock, St. Paul, third district; delegates to the American Medical Association, Drs. Arthur Sweeney, St. Paul, and Rolla C. Dugan, Eyota; and alternates, Drs. George D. Head, Minneapolis, and Charles F. McComb, Duluth. It was voted to accept the invitation of Winona to hold the next annual meeting in that city.

MISSOURI.

To Regulate Sale of Carbolic Acid.—The Retail Druggists' Association of St. Joseph has petitioned the board of health to use its influence in inducing the council to pass an ordinance to require that all carbolic acid sold without a physician's prescription be diluted 50 per cent., and that pure carbolic acid be not sold except on the written prescription of a physician.

Howard County Medical Society Officers.—The following are the officers of this society for the coming year: President, Dr. John B. Fleet, New Franklin; vice-presidents, Drs. Uriel S. Wright, Fayette and James R. Champion, Hilladale; secretary-treasurer, Dr. Charles W. Watts, Fayette; censors, Drs. Walter S. Thompson, Armstrong, Newton E. Smith, Fayette, and F. C. Richards, Fayette, and delegates to state medical association, Dr. Vaughn Q. Bonham, New Franklin.

Indicted for Misuse of the Mails.—A. P. Miller, of Kansas City, is said to have been indicted by the Federal grand jury for using the mails to advertise improper medical remedies. He has been arrested four times in the past three years for similar offenses. His first offense occurred in Chicago, when no sentence was passed on him. Some months later he was arrested in Kansas City and served a jail sentence of six months; again, early in this year, he was indicted and this charge was pending against him when the last indictment, issued November 7, was found.

Exhibit Comes to Kansas City.—Jackson County Society for the Relief and Prevention of Tuberculosis has made arrangements to bring to Kansas City the exhibit of the National Association for the Prevention of Tuberculosis. The society has inaugurated an active campaign of education and will use the exhibit to demonstrate to the people the modern methods of combating tuberculosis. At the meeting held November 6 the following officers were elected for the ensuing year: President, Frank P. Walsh; vice-presidents, J. T. Smith, Dr. Edward W. Schauffler, Dr. Walter S. Wheeler and Alfred Benjamin; treasurer, Ralph Swofford, and secretary, Mrs. K. E. Pearson.

St. Louis.

Fined for Violating Milk Law.—George S. Bechtel is said to have been fined $25 in the police court for selling skimmed milk that was below the standard required by the milk ordinance.——John Shulte is said to have been fined $50 for selling milk in which formaldehyd had been used as a preservative. Eight other cases against milkmen were continued.

Milk Inspection.—A new ordinance, covering the inspection of the milk supply, presumably framed at the instigation of the milkmen, has been introduced in the house of delegates. In this ordinance nominal fines are imposed for violations. The St. Louis *Republic*, in a scathing editorial, denounces the milkmen for attempting to secure the passage of an ordinance inadequate to protect the public.

Poisoned by Headache Powders.—Gerald Jenkins, a deaf mute, was seriously affected after having taken five powders of capudine, a widely advertised headache remedy, and was treated at the city hospital. He explained to the hospital physicians in writing that he was troubled with neuralgia, and that in his efforts to obtain relief he had taken repeated doses of the powder, which resulted in very great heart depression that almost caused death.

NEW YORK.

September Vital Statistics.—During September there were reported 11,069 deaths, equivalent to an annual death rate of 15.5 per 1,000. During the same period 16,893 births were reported, equivalent to an annual rate of 23.7 per 1,000. The deaths from tuberculosis were 1,089, or an increase of about 100 as compared with the five-year average for the month. Typhoid fever caused 195 deaths, slightly more than the average. Deaths from external causes were 723, which included 133 suicides and 23 homicides.

Health Lessons in Street Car Transfers.—The United Traction Company of Troy has printed a new supply of transfers, and has had printed on the back such information as the Troy tuberculosis relief committee of the State Charities Association desires disseminated. The transfers just issued and distributed every day in the week now read:

"CONSUMPTION IN EARLY STAGES CAN BE CURED." Take your case in time to a good physician or go to the Relief Station, No. 2 Hill Street, and you may be cured—do not wait.

Consumption is caught mainly through the spit of consumptives.
Friends of consumption: dampness, dirt, darkness, drink.
Enemies of consumption: sun, air, good food, cleanliness.

If you have tuberculosis don't give it to others by spitting; even if you have not, set a good example by refraining from the habit, always dirty, often dangerous.—(Troy Tuberculosis Relief Committee, State Charities Aid Association.)

New York City.

Harvey Society Lecture.—The third Harvey Society Lecture, delivered November 21, at the New York Academy of Medicine by Dr. Graham Lusk, professor in the University and Bellevue Medical College, is on the subject "Metabolism in Diabetes."

Interne Examination.—An examination for two internesships on the staff of the Hospital for Nervous Diseases in the City of New York will be held December 15. Applications should be addressed to Dr. Edward L. Hunt, Secretary, 54 West Fiftieth street, New York City.

Death Rate Remains Low.—The weekly death rate in Greater New York continues to be lower than it was last year. The number of deaths for the week ending November 7 was 1,140, equivalent to an annual death rate of 13.45 per 1,000, while for the corresponding week of 1907 there were 1,248 deaths, equivalent to an annual rate of 15.19.

Danger in Brooklyn Water.—The question whether the water supply of Brooklyn is contaminated and unfit for domestic use is causing considerable discussion. The Board of Health has advised the residents to boil the water, while Dr. Daniel D. Jackson, director of the laboratory of the water department, thinks that this is unnecessary, and that the purity of the water is not seriously affected.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended November 7, 443 cases of tuberculosis with 147 deaths; 291 cases of diphtheria with 16 deaths; 137 cases of measles with 6 deaths; 143 cases of scarlet fever with 6 deaths; 53 cases of typhoid fever with 12 deaths; 9 cases of whooping cough with 3 deaths; 5 cases of cerebro-spinal meningitis with 2 deaths; and 91 cases of varicella—a total of 1,172 cases and 192 deaths.

Report of Hospital for Cripples.—The annual report for the Hospital for Ruptured and Crippled Children shows that 46,272 patients have been treated during the past year at a total expense of $111,492. There was a deficit of $29,711. Manual training classes for crippled children were established and gar-

dening was taught at the country home near Tarrytown. During the year there were 1,036 cases of infantile paralysis treated, which is a marked increase over previous years. Dr. Virgil P. Gibney was reelected surgeon-in-chief.

Preparations for Tuberculosis Exhibit.—The tuberculosis exhibit recently shown in Washington in connection with the International Congress has reached New York, and is being prepared for exhibition at the American Museum of Natural History, where three entire floors have been placed at the disposal of the committee. The exhibit was formally opened by Governor Hughes, November 20, and will be open for at least six weeks. It is by far the largest of its kind ever collected. A general effort has been made to avoid duplication, so that the exhibit as a whole will present a vast panorama covering every aspect of the world-wide struggle to conquer this plague.

Consumptive Patients Strike.—Twelve Hebrew patients in the sanitarium at Otisville, which belongs to the Department of Health of this city, have objected to the work imposed on them and have returned to the city to endeavor to adjust their grievances with the Health Board. Patients in the early stages of the disease at this institution are expected to assist at light work for two hours daily, and these patients contended that they had been discriminated against on account of their race. After several consultations with the Health Department, nine of the malcontents decided to go to the Riverside Hospital. The remaining three refused and were left to care for themselves.

More Asylums Needed.—Although steps have been taken during the last two years to house the increasing number of insane in the state by the erection of additions to existing hospitals, Dr. Albert W. Ferris, president of the State Lunacy Commission, says that by November, 1909, the excess of patients over the certified capacity will be 1,753. During the past year additional accommodations have been provided for 2,055, while further additions under construction will make room for 839 more patients. The greatest crowding exists in the metropolitan districts, and from New York City the largest and most continuous stream of insane patients proceeds. On October 1 the number of patients in the Manhattan, King's Park, Central Islip, and Long Island State hospitals was 12,062. More than 1,900 patients from New York City are quartered in the hospitals in other parts of the state.

OHIO.

Antitoxin Stations Established.—The State Board of Health has established 179 stations in the state, where supplies of antitoxin are kept on hand so that they may be easily accessible.

Society Meetings.—At the annual meeting of the Eastern Ohio Medical Association, held in East Liverpool last week, Dr. James S. McClellan, Bellaire, was elected president, and Dr. Alfred C. Beetham, Bellaire, was re-elected secretary.

Hospital Notes.—The Elyria Memorial Hospital was open to receive patients, October 31.——The board of managers of Youngstown City Hospital announces that the recent bazaar has added nearly $8,300 to the funds of the institution.

Personal.—Dr. Harry Freudenberger has resigned as bacteriologist of the Cincinnati City Hospital.——Dr. Francis Dowling, Cincinnati, returned from Europe October 29.——Dr. Alfred Gaither, Cincinnati, was attacked by footpads, October 28, but succeeded in fighting off his assailants.——Dr. George L. Bowman, Lorain, is reported to be seriously ill in St. Joseph's Hospital, Lorain.

Hospital Staff Elected.—At the meeting of the Board of Medical Directors of the Cincinnati Hospital, November 6, the following visiting staff was elected for the ensuing year: Senior physicians, Drs. George A. Fackler, Edwin W. Mitchell, Oliver P. Holt, Mark A. Brown, John E. Greene and Frederick Forchheimer; junior physicians, Drs. Allan Ramsey, Louis Heyn and Henry A. Woodward; senior surgeons, Drs. Nathaniel P. Dandridge, Joseph Ransohoff, John C. Oliver and Edward W. Walker; junior surgeons, Frank E. Fee, Arch I. Carson, Harry H. Hines and Carl Hiller; obstetricians, Drs. William D. Porter and George M. Allen; gynecologists, Drs. Charles A. L. Reed, Charles L. Bonifield, John M. Withrow and Sigmar Stark; junior obstetrician and gynecologist, Dr. James W. Rowe; neurologists, Drs. Frank W. Langdon and Herman H. Hoppe; pediatrists, Drs. B. Knox Rachford and Allyn C. Poole; orthopedic surgeons, Drs. Charles E. Caldwell and Albert H. Freiberg; dermatologists, Drs. Augustus Ravogli and Meyer L. Heidingsfeld; junior dermatologist, Dr. Arthur J. Markley; laryngologists and aurists, Drs. Samuel E. Allen and John W. Murphy; oculists, Drs. Robert Sattler and Derrick T. Vail; pathologists, Drs. Casper T. Hegner and Robert W. Thomas; neuropathologist, Dr. David I. Wolfstein; radiographer, Dr. Sidney Lange; laboratory staff, Dr. Horace J. Whitacre, director, and Drs. Frederick W. Lamb, A. E. Osmond, Charles E. Rockhill and Oscar Berghausen; consulting staff, physician, Dr. John C. MacKenzie; surgeon, Dr. Phineas S. Conner; obstetricians and gynecologists, Drs. William Tayloe and Chauncey D. Palmer; oculists, Drs. Christian R. Holmes and Stephen C. Ayres, and physician to the Branch Hospital, Dr. Benjamin F. Lyle.

PENNSYLVANIA.

New Medical School Opens.—The opening exercises of the West Penn Medical College for its first session since the merger with the University of Pittsburg, were held October 7.

Tuberculosis Camp Burned.—The Woman's Tuberculosis Camp at Marshalsea was burned November 5. The eighteen patients were removed without casualty, but the building was entirely destroyed, causing a loss of $7,000.

Hospital Contract Awarded.—The contract to erect the Panther Creek Valley Hospital on ground donated by the Lehigh Coal Company has been awarded to J. Andrew Breslin, of Summit Hill. The building is expected to cost about $30,000.

Heiser Honored.—Dr. Victor G. Heiser, P. H. and M.-H. Service, director of health and chief quarantine officer of Manila, was the guest of honor at a reception given by the Cambria County Medical Society in Johnstown, November 4.

Academy of Medicine Organized.—The New Kensington Academy of Medicine has been organized with the following officers: Dr. T. Ethelbert McConnell, Parnassus, president; Dr. Robert M. Powers, secretary-treasurer; and Dr. Albert S. Kauffman, reporter.

Personal.—Dr. Henry Sommers, Jr., pathologist to the State Hospital for the Insane, Norristown, has resigned.——Dr. Amy Wolf, of Philadelphia, has been appointed an assistant physician in the State Hospital for the Insane at Norristown.——Dr. John A. Brobst, Macungie, is reported to have retired from active practice.——Dr. John M. Dumm, Mackeyville, sustained a serious accidental axe-wound of the face, October 27.

Cattle Plague Causes Quarantine of Four Counties.—Owing to the outbreak of foot-and-mouth disease among cattle in Columbia, Montour, Northumberland and Union counties, the secretary of agriculture has issued a quarantine order forbidding the interstate movement of cattle, sheep, swine and goats from the counties mentioned. Governor Stuart has directed the state veterinarian to take all means to eradicate the disease, arranging that the appropriation for the state Live Stock Sanitary Board, amounting to $26,000, be put at the disposal of the officers.

Sixtieth Anniversary Bucks County Medical Society.—On November 11 this society celebrated its sixtieth anniversary at Doylestown. The celebration consisted of a meeting at which papers appropriate to the occasion were read. In the evening a banquet was held, at which there were appropriate addresses by members of the society and by citizens. The cover of the program was an allegorical picture representing the country doctor of sixty years ago getting into his gig. The illustration is a credit to the artist, Dr. F. B. Swartzlander, of Doylestown, who wrote the following sentiments to accompany the illustration: "Sixty years ago the doctor, his horse and gig, his empiric knowledge of medicine, and common sense views of life, practiced his art plodding along city street and through country lane, little dreaming of the towering growth so soon to spring upward from the level plain of his existence. In him we have one root, rugged and strong, hard headed common sense, joining with the more mystic science and the arts to form the trunk of our ancestral ivy, growing ever upward, gaining strength year by year, it puts forth branches, surgery and medicine, these in turn dividing into the lesser specialties, giving out leaves, each one of which breathes forth some new benefit to mankind, and crowns as with a wreath of victory the tablet erected to our past achievements."

Philadelphia.

Tuberculosis Dispensary Buys Site.—The Kensington Dispensary for the Treatment of Tuberculosis bought a residence and factory for $15,000, and will fit up the buildings for hospital purposes.

To Enlarge Eye Hospital.—Plans have been completed for the enlargement of Wills Eye Hospital. The main or clinical building is to be extended twenty feet, and the cost of the improvement is to be $30,000.

Land for the Lutheran Hospital.—A plot of ground, containing over 7 acres with frontages of 315 feet on Baltimore Avenue, and 516 feet on Fifty-eighth Street, has been purchased for $57,000, as a site for the new Lutheran Hospital.

Externes Elect.—At a recent meeting of the resident and ex-resident physicians of Mount Sinai Hospital, the following officers were elected: President, Dr. J. L. Werner; vice-president, Dr. B. H. Mann; secretary and treasurer, Dr. Michael Austin, and Historian, Dr. J. Levy.

Aid Consumptives.—At a meeting held to welcome the Jewish poet, S. Bloomgarden, and to give moral and financial support to consumptive Jews stranded in Colorado, 1,500 persons gathered in the Walnut Street Theater, September 25, and contributed $1,500 to the cause.

Officers Elected.—At the regular meeting of the Society of Normal and Pathological Physiology of the University of Pennsylvania, the following officers were elected for the ensuing year: President, Dr. David H. Bergey; vice-president, Dr. J. C. Hickey; and secretary-treasurer, Dr. Harold B. Wood.

Red Cross Report.—The annual meeting of the Pennsylvania Branch of the American National Red Cross was held in Philadelphia, November 7. The report of the secretary showed a gain of 1,370 members during the year, and that during the same period $4,220.98 had been distributed. This was the first branch of the society to supply nurses for the Hattiesburg (Miss.) cyclone disaster in May last.

Personal.—Dr. Seneca Egbert began, on November 5, a series of free public lectures at the Academy of Natural Sciences, on the "Prevention of Disease and the Preservation of Health."——Dr. S. Weir Mitchell has been elected president of the St. Andrew's Society of Philadelphia, the oldest Scotch society in the United States.——Dr. James Tyson was given the honorary degree of LL.D. by Haverford College, October 16.——Dr. William L. Palmer was run down by a trolley car and seriously injured October 27.

Alvarenga Prize.—The College of Physicians and Surgeons of Philadelphia announces that the next award of the Alvarenga Prize, amounting to about $180, will be made July 14, 1909. Essays intended for competition must be received by the secretary of the college by May 1, 1909; each essay must be typewritten; must be without signature; must be plainly marked with a motto; and must be accompanied with a sealed envelope having on its outside the motto of the paper, and within the name and address of the author.

Hospital Reports.—The report of the Polyclinic Hospital for the month of October shows that 133 new patients were admitted, and that 1,834 new patients were treated in the dispensary. The total number of visits to the out-patient department reached 8,492 and 599 cases were treated in the accident ward.——The report of the Presbyterian Hospital for October shows that 172 patients were admitted to the institution and that 374 were treated in the wards. The monthly report of the Howard Hospital shows that 125 new patients were admitted to the wards during October and 845 new cases were treated in the dispensaries. The total number of visits made in the dispensaries reached 4,972.

Health Report.—The total number of deaths reported to the Bureau of Health for the week ended November 7 aggregated 421, an increase of 16 over the previous week and a decrease of 14 as compared with the corresponding week of last year. The principal causes of death were: Typhoid fever, 3; scarlet fever, 4; diphtheria, 14; consumption, 51; cancer, 24; apoplexy, 21; heart disease, 37; arteriosclerosis, 7; acute respiratory disease, 40; enteritis, 29; hepatic cirrhosis, 3; nephritis, 52; premature birth, 12; congenital debility, 9; senility, 5; suicide, 2; accidents, 14; and marasmus, 8. There were 152 cases of contagious diseases reported with 21 deaths, as compared with 202 cases and 21 deaths reported in the preceding week.

Cocain Situation.—More evidence of the use of cocain by schoolboys in this city and the peddling of the drug among them by unscrupulous men has been discovered by the medical inspectors of the Health Bureau, who found a boy under the influence of cocain in the John Hay School, November 5, and one in the Washington School, November 6. The boys were in a state of stupor and acknowledged the use of cocain.——Philip Hyde, who pleaded guilty to the charge of forging orders on the Smith, Kline and French and Co. for large amounts of cocain, which he sold to cocain peddlers, is said to have been sentenced to imprisonment for three years in the Eastern Penitentiary by Judge Kinsey, November 4.——Eighteen persons, either users of or dealers in cocain, but all victims of the habit, have been arraigned before the Magistrates' Court. Twelve of the prisoners were sent to the House of Correction for three months, five were held under bail and one was held for a further hearing. The Director of the Public Safety has issued orders that "coke fiends" be sent to the House of Correction in order to secure treatment in the hospital connected with that institution.

WASHINGTON.

Unlicensed Practitioner Fined.—A. H. Hardinge, Seattle, has been arrested for practicing without a license. He pleaded guilty and is said to have been fined $50.

Must Be Vaccinated.—After November 9 pupils of the Seattle schools will not be received or allowed to continue in school unless they have complied with the rules of the board of health in regard to vaccination.

Personal.—Dr. James A. M. Hemmeon has returned to Seattle after three months in the South and abroad.——Dr. C. A. Betts of Everett, Wash., until recently a first lieutenant and assistant surgeon in the Second Washington Infantry, has been appointed first lieutenant in the medical reserve corps of the Army and assigned to duty at Fort Lawton.

Needs State Hospital.—Dr. John M. Semple, superintendent of the State Hospital for Insane, Medical Lake, in urging a gross appropriation of $301,350 for the hospital for the ensuing two years says in his biennial report that in the two years ended September 30, there were 421 persons committed to the institution, and that it is now crowded much beyond its planned capacity. In his estimate Dr. Semple figures the average population to be 725 patients. He emphasizes the needs of an operating room and approved hydrotherapeutic apparatus, and dwells on the need of fire-fighting appliances.

Contract Practice.—At the meeting of the King County Medical Society, November 2, it was decided that all doctors having contract practice, such as lodge, labor union, department store, hospital association, etc., should be excluded from membership in the society, and the present members were given until Feb. 1, 1909, to sever their connection with such organizations under penalty of expulsion. The society also concurred to the plans advocated by the state association whereby the county society shall share equally with the state society and the State Medical Board the expense of the prosecution of illegal practitioners in those cases that terminate successfully. In the unsuccessful cases the county society bears none of the expense.

GENERAL.

No-Spitting Notice.—The New York, New Haven & Hartford Railway has placed signs in prominent display in all cars on its service, forbidding spitting in public places. About two months ago the road issued orders to all its passenger brakemen to put a stop to the practice of spitting in cars.

Nastine Treatment Not Specific.—In the case of a leprosy patient at the Kalihi Receiving Station, Hawaii, who has been under the Nastine treatment for several months, a bacteriologic examination recently made demonstrated that the bacilli of leprosy were still to be found. All clinical symptoms have disappeared, and the bacilli instead of being distributed, are gathered in bunches. As a result of this examination the patient is to remain segregated, and the Nastine treatment will be continued.

International Society for Esperantist Medical Students.—From the *Vocho de Kuracistoj* we learn that a students' section is being formed in connection with the International Esperanto Medical Association (Tutmonda Esperanta Kuracista Asocio), concerning which a note was published in THE JOURNAL, November 7, page 1610, students are eligible under the same conditions as physicians. The object of this section is to facilitate the interrelations of students of all nations in regard to medical matters, the requirements of foreign universities, foreign students' associations, the courses offered to foreigners, and correspondence on any matters that are of individual interest. The yearly subscription is $1. Address D. W. Robin, ul Senatorska, 30, Warsaw, Russia.

Physicians Deceived by Insurance Agent.—Dr. Walter D. Chase, Bethlehem, secretary of the Medical Society of Northampton County, Pa., desires to warn physicians concerning an insurance agent who is said to be defrauding physicians in that region. Although he has been discharged by the Traders' and Travelers' Accident Company of New York, this agent, it is alleged, is still pretending to appoint examiners for this company and for the Bankers' Life Insurance Company, provided the victim will take out an accident policy. Here comes the point at which some physicians prove themselves easy: The agent collects the initial fee on this policy. Dr. Chase de-

scribes the agent as follows: About 35 years old, weight 165, about 5 feet 9 inches tall, sandy complexion, smooth face, ruddy and quick and hustling in manner.

Personal.—Col. Philip F. Harvey, Medical Corps, U. S. A., who has been chief surgeon of the Department of the Lakes, Chicago, for more than two years, has gone on leave of absence preliminary to his retirement next month, and will make his home in Washington, D. C.——The gold medal annually awarded by the Association of Military Surgeons of the United States, has been given to Surgeon William Colby Rucker, P. H. and M.-H. Service, now on duty in San Francisco, for his paper on "The Relation of the Military and Naval Forces of the United States to Public Health."——Dr. L. F. Henning, Medical Reserve Corps, U. S. Army, has been placed on the inactive list, and will enter private practice at Jerome, Idaho.——Dr. George H. Warne, Hobbs, Ind., has been appointed medical inspector in the Philippine Islands.

Southern Physicians Elect.—At the annual meeting of the Southern Medical Association, held in Atlanta, November 10-12, under the presidency of Dr. Benjamin L. Wyman, Birmingham, Ala., the following officers were elected: Dr. Giles C. Savage, Nashville, president; Drs. James M. Jackson, Jr., Miami, Fla.; Charles M. Murry, Ripley, Miss.; George Dock, New Orleans; Thaddeus A. Casey, Birmingham, Ala.; John C. Olmstead, Atlanta, Ga., and Edward C. Ellett, Memphis, Tenn., vice-presidents, and Dr. Oscar Dowling, Shreveport, secretary-treasurer (re-elected). After his induction into office, the president appointed the following councilors: Drs. Walter W. Crawford, Hattiesburg, Miss., Benjamin L. Wyman, Birmingham, Ala., and Dr. George R. West, Chattanooga, Tenn. The following section officers were elected: Surgery—Dr. Francis G. DuBose, Selma, Ala., chairman, and Dr. Jere L. Crook, Jackson, Tenn., secretary; medicine—Dr. John A. Witherspoon, Nashville, Tenn., chairman, and Dr. Henry E. Mitchell, Birmingham, Ala., Secretary; ophthalmology—Dr. Alexander W. Stirling, Atlanta, Ga., chairman, and Dr. Arthur B. Harris, Birmingham, Ala., secretary.

Surgeon General's Report.—The report of the Surgeon General, U. S. Army, to the Secretary of War for 1908 includes a study of the health and sanitary conditions of the Army for the preceding year. The mean strength of the Army for 1907 was 54,949. The total admissions on sick report were 65,546, equivalent to an admission rate of 1218.26, which compares favorably with 1276.88, the rate for the previous year and 1773.86 for the period from 1898 to 1905, inclusive. There were 319 deaths from all causes, equivalent to a death rate per 1,000 of 5.81, which also compares favorably with 6.11, the rate for the previous year, and 13.91, the rate for the period from 1898 to 1905, inclusive. The death rate for disease, 3.44, is slightly higher than that of 1906, 3.28, but is lower than that of any other year since 1897. During the year 1,107 men were discharged for disability, equivalent to a rate of 20.15, which compares favorably with 26, the rate for 1906, and 23.43, the rate for the period from 1898 to 1905, inclusive. The constantly non-effective rate, 46.17, was considerable better than that for 1906, which was 49.79. The most important item affecting the efficiency of the Army was venereal diseases. During the year, the admission rate, 196.62, was higher than that of 1906, but the non-effective rate, 12.43, was slightly lower. There were constantly on sick report for this class of diseases 668.65 men. Malarial fevers caused an admission rate of 63.19, which was lower than for the rate of the previous year, which was 107.67. Next in importance among diseases were diarrhea and enteritis, with an admission rate of 49.26, a little more than half of that for the previous year; bronchitis, acute and chronic, with a rate of 47.43, slightly higher than for the last year; and influenza, 40.46, or about two and one-half times the rate for the preceding year. Most important among causes of death were tuberculosis, with a ratio of .53; pneumonia, .44; cerebrospinal fever, .38; typhoid fever, .29; and heart diseases, .27. All these rates are higher than for the preceding year, with the exception of tuberculosis, which is considerably lower. Among the chief causes of discharge for disability were tuberculosis, with a ratio of 3.22; venereal diseases, with a ratio of 2.76; and insanity, with a ratio of 1.44. There were 154 admissions for gunshot wounds, with 34 deaths, and 2,832 admissions from other than gunshot wounds, with 6 deaths. No enlisted men were killed in action during the year; one was wounded, but recovered. Drowning accidents caused 39 deaths, or 12 per cent. of the deaths from all causes. There were 26 suicides, 13 fewer than in 1906; and the number of homicides for the year increased from 9 to 17.

CANADA.

Portrait Presented.—At the last monthly general meeting of the Academy of Medicine, Toronto, October 27, a portrait of the late John Fulton, M.D., Toronto, was presented by his daughters to the academy. Dr. George A. Bingham made the presentation address. Dr. Fulton died in 1887, and at the time was professor of surgery in Trinity Medical College. He was the founder of the *Canada Lancet*.

Clean Milk Crusade.—The Toronto Branch of the Milk Commission of the Canadian Medical Association is pursuing an active campaign for clean milk for that city. Toronto consumes 80,000 quarts of milk per day, of which about 5,000 quarts are certified, but not according to the regular acceptation of that term. The milk commission is asking the local board of health to take the whole milk supply in hand and to establish proper certification, inspection and pasteurization.

Hospital Notes.—The Toronto General Hospital is considering refusing all alcoholic cases in its wards. In the opinion of the superintendent delirium tremens cases should go to the Provincial Hospital for the Insane and common cases of intoxication to the jail.——The Alexandra Contagious Diseases Hospital, Montreal, had the following admissions, discharges and deaths in October: Diphtheria, 17, 19 and 1; scarlet fever, 24, 18 and 1; measles, 10, 8 and none. There was previously reported for the present year 358 admissions, 342 discharges and 41 deaths.——St. Michael's Hospital, Toronto, established this month a new department for the treatment of outdoor patients suffering from diseases of the eyes. The department is in charge of G. Herbert Burnham, with Drs. Newbold Jones and H. Allan McCullough as assistants.——The Bethesda Dispensary and Hospital, Winnipeg, was opened November 3, with accommodation for fifteen patients.

Society Meetings.—At the annual meeting of the Quebec Medical Society, held at Laval University, the following officers were elected: President, Dr. Ex. T. Arthur Simard; vice-presidents, Drs. Simon E. Grondin and Rosaire Paquin; secretary, Dr. Odilon Leclerc; and treasurer, Dr. P. Calixte Dagneault.——At the annual meeting of Ottawa Medical Society, held in St. Luke's Hospital October 23, the following officers were elected: President, Dr. Fred W. McKinnon; vice-presidents, Drs. R. Lorne Gardner, and Charles T. Ballantyne; secretary, Dr. F. McKelvey Bell; treasurer, Dr. Church, and council, Drs. John F. Dowling, John F. Pidd, William I. Bradley, William C. Cousens and Alfred J. Horsey.——At a meeting held in St. Thomas, November 6, the organization of the Elgin County Medical Society, which was commenced March 19, was perfected. The following officers were elected: President, Dr. George W. Ling, Dutton; honorary president, Dr. William C. Van Buskirk, St. Thomas; vice-presidents, the presidents of the East and West Elgin and St. Thomas medical associations; secretary, Dr. Archibald Leitch, St. Thomas; treasurer, Dr. Leeson, Aylmer, and executive committee, Drs. Richard M. Lipsey, St. Thomas; Andrew B. Riddell, Bayham, and McLachlan, Dutton.

Personal.—Dr. C. W. Duvall, McGill University, Montreal, has been made professor of pathology in the medical department of the Tulane University, New Orleans.——Dr. F. Flegg, in charge of the Isolation Hospital, Ottawa, has resigned and started for England, November 20.——Dr. William F. Adams, Toronto, has been placed in charge of the hospital at Yockou, Hunan, China, under the auspices of the Reformed Church.——Dr. William A. Young, Toronto, managing editor of the *Canadian Journal of Medicine and Surgery*, is recovering after a severe illness.——Dr. J. Panteleon Pelletier, member of the Quebec Legislature for Sherbrooke, Quebec, is to be elected speaker of that body.——Dr. Robert M. Coulter, deputy postmaster-general, Ottawa, is visiting in Australia.——Dr. D. J. Gibb, Wishart, Toronto, has been made chief of the ear, nose and throat department and Dr. Newton A. Powell, Toronto, is to be chief of the emergency department of Toronto General Hospital.——Dr. W. T. Wilson, assistant superintendent of the Toronto Provincial Hospital for the Insane, has been appointed superintendent of a similar institution at Cobourg.——Dr. J. G. Fitzgerald, pathologist to the Toronto Provincial Hospital for the Insane, has resigned and gone to Detroit.——Lieutenant-Colonel James A. Grant, M.D., formerly of Ottawa, but latterly of the permanent army medical service at Victoria, B. C., has been temporarily appointed Principal Medical Officer, Western Ontario Command, with headquarters at Toronto.——Prof. Archibald B. MacCallum, M.B., professor physiologic chemistry in the University of Toronto, recently had conferred on him the degree of D.Sc., by Trinity College, Dublin.——Dr. O. R. Avison, medical missionary at Seoul, Korea, has been on a visit to his old home, Toronto.

FOREIGN.

Famous Asylum to be Destroyed.—San Hipolito, the famous old insane hospital of the City of Mexico, is to be vacated in a short time and demolished, as one of the improvements necessary for the construction of the great avenue from the Colonia Guerrero to the Alameda. A modern building for an insane hospital is being constructed at La Castañeda, and will be completed in a short time.

Epidemic Diseases in Mexico.—It is reported from Merida that yellow fever has broken out among the Yaqui Indians who were deported to Yucatan from Sonora.——The epidemic of smallpox in the camp of the railway builders near Mazatlan is said to have assumed serious proportions.——In order to prevent the spread of smallpox in Zacatecas, the teachers in the rural schools will be instructed in the technic of vaccination, and will be required to vaccinate all children before they are enrolled in the school.——A number of cases of smallpox are reported in Alvarado.—The typhus fever in Mexico City has been suppressed, and it is believed that no further outbreak will occur.——Diphtheria is reported epidemic in Nogales near Sonora.——Hemorrhagic smallpox is reported to be prevalent on the Rancho de San Antonio near Durango.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Nov. 7, 1908.

Outbreak of Ptomain Poisoning in an Irish Convent.

A severe outbreak of ptomain poisoning has occurred in the Mount St. Vincent Convent Orphanage, Limerick. The 200 girls, whose ages range from 6 to 16 years, were in good health until after dinner on November 3. This meal consisted of stewed meat and 5 children became seriously ill, and soon some 20 others were attacked, and by the following day the number had increased to over 50. Already 8 deaths have occurred. The cause of the outbreak can not yet be stated, but Professor McWeeney of Dublin is making a bacteriologic investigation.

Outbreak of Illness Due to a Rat Virus.

A startling example of the dangers of the use of viruses directed against domestic pests has just been reported by Dr. Collingridge, health officer of the city of London. Illness broke out in a business establishment in the city where a large number of persons are employed. Between July 18 and 22, 12 men became seriously ill with severe headache, cramp, and in many cases severe collapse. The severe symptoms lasted 48 hours and pointed to some infection. An investigation by Dr. Klein, the bacteriologist, revealed the presence of a bacillus which he regarded as the cause of the illness. Inquiries were made and it was found that the only thing common to the life of the persons affected was that they all dined in the same room and that no one suffered who had dined in any of the four other dining rooms in the establishment. An offensive odor was noticed in the dining room in question, and on removing the boards a large number of dead mice were found in a state of decomposition. It was then discovered that a much-advertised virus had been purchased and placed about the dining room and in a pantry adjoining. According to the advertisement the virus will cause a fatal contagious disease among rodents, but is harmless to domestic animals and man. Dr. Klein proved that the organism present in the patients was identical with the organism in the virus. The virus was laid about on pieces of bread and it was easy to conceive that mice eating it might carry the contagion about on their feet to the floors, food, shelves, chairs, tables and plates and thus infect human beings. Dr. Collingridge observes that there are several of these viruses on the market, each of which claims to destroy rodents and to be innocuous to domestic animals and man. As the principle of all is the communication of a disease to rodents, it is in his opinion dangerous that they should be purchasable by any or every person. If they are to be used they should be placed about with the greatest precaution and under skilled supervision. A copy of Dr. Klein's report with his bacteriologic findings has been sent to the local government board, urging the desirability of putting restrictions on the sale of such poisons.

Plague in Liverpool.

At Liverpool a man engaged on a coaling barge became ill and died the same day. Bacteriologic investigation showed that the disease was plague. Meanwhile, all precautions had been taken and all known contacts with the patient kept under strict observation. As more than five days have elapsed since the patient's death, there is no reason to expect that the disease will spread. No diseased rats have been found.

The Cause of Heat Stroke.

At the pathological laboratory of Oxford, Dr. Harvey Sutton has made some important experiments on himself on the influence of high temperatures on the body, which throw great light on the causation of heat stroke. He has confirmed Haldanes view that the essential factor in the production of heat stroke is the combination of excessive humidity and high temperature. It appears that at a certain temperature in a moist atmosphere the heat-regulating mechanism of the body breaks down and the temperature begins to rise. Dr. Sutton found that this occurred with a "wet bulb" temperature of 95 F. The rise of temperature increased progressively, being on the average 0.7 F. in the first hour, 1.2 F. in the second, and 1.5 F. in the third. All the experiments pointed to the conclusion that once the balance of the mechanism of heat regulation was definitely upset by high external temperature and almost total abolition of heat loss in evaporation, a vicious circle is established. The bodily temperature rises and as a result the oxidation processes, and therefore the production of heat, also increase and the body temperature rises still further. Once this process has been set going it slowly but surely increases in speed. Not only does the body temperature rise while the external temperature still remains constant, but the rise gradually becomes more rapid. With this rise there was a great increase in the consumption of carbohydrates, which are the first to be sacrificed when the heat-regulating mechanism breaks down. In the treatment of heat stroke, therefore, the energetic reduction of the body temperature is the principal aim.

PARIS LETTER.

(From Our Special Correspondent.)

PARIS, Oct. 29, 1908.

The Corporate Association of the Paris Medical Students.

The Corporate Association of Medical Students, founded in 1902 in Paris, was one of the first manifestations of the new spirit, bringing the students together on the plane of their economic and professional interests, without regard to philosophical, political or religious opinions. The association has to-day 850 student members and an income of 16,000 francs (about $3,200), 10,000 francs from membership dues and the rest from advertisements published in the organ of the association. It prefers to preserve its independence, and receives no assistance from the state or from the municipality. The members enjoy substantial advantages: reading-rooms and work-rooms, a library of 3,500 volumes, the services of an agency for supplying temporary substitutes in practice, or disposing of practices, supplementary instruction, practical conferences in pharmacology, obstetrics, etc.

It also is active on behalf of the moral interests of the students, as, for instance, in the campaign for reform in medical studies, and the movement which has resulted in the congresses of practitioners.

The association is now seeking to offer its benefits to physicians as well as to students by founding a Physicians' House, so that physicians who come to Paris may easily find information in regard to the hospitals to be visited, the courses open, etc. It will also undertake to supplant the middlemen who make their profits from both sides in disposing of practices or in supplying substitutes. To realize this project, it will be sufficient if one-fourth of the French physicians join the association, paying dues of 5 francs a year.

Legislation on Charity.

The report on the budget of the ministry of the interior, which has just been distributed to the deputies, describes the workings of the law of 1905 in regard to state aid to the aged, infirm and incurable. According to the intention of the legislator, assistance was to be given only to completely destitute persons, whose age or infirmities make it absolutely impossible for them to earn a livelihood. In many localities subjects of rheumatic pains are considered incurable. An inspector visited the home of an "incurable" recipient of state charity, and learned that the invalid had gone to work in his vineyard, leaving at home only his wife, six months pregnant. Another "incurable" received aid on the ground of "incipient anemia." This shows how unsatisfactory it is to leave the dispensing of this charity in the hands of the municipalities, which are inevitably too indulgent toward their voters. A vigorous control by agents of the central government is necessary in order to avoid abuses.

Psychiatry and Literature.

Paul Bourget, in a recently published article, declares that he believes firmly in the future of psychiatry, and that the

literature of observation (history, criticism, fiction and the drama) will be much enriched by psychiatric study on the part of writers. Just now, when in consequence of certain recent trials, that of Jeanne Weber in particular, experts have been roughly handled by the political press, Bourget comes to their defense. If experts often contradict each other in regard to a criminal's responsibility, their hesitations and contradictions are, in Bourget's mind, only a proof of the extreme complexity of the subject. He quotes the answer of Dr. Dupré in the case of Soleilland. The lawyer asked him if he could state positively that Soleilland was not insane. Dr. Dupré replied: "The word 'insane' has no scientific meaning"; meaning thereby that the comprehension of a mental state required a minute analysis, and that ready-made formulas were not adequate.

To Erect a Monument to Professor Cornil.

A committee has just been formed to erect a monument to Dr. Cornil, former professor of pathologic anatomy in the faculty of medicine at Paris, who died last April. The chairman is ex-President Loubet, and President Fallières is honorary chairman. The monument will be placed in Dr. Cornil's birthplace, Cusset, near Vichy.

The Campaign Against Bovine Tuberculosis.

According to the law of 1898, tuberculous animals are slaughtered by order of the mayor and the owners reimbursed. In cases of generalized tuberculosis, the reimbursement amounts to one-half the value of the meat; in cases of localized tuberculosis, to three-fourths; and to the whole value if it appears after the slaughter that the animal was not affected with tuberculosis. In 1899 the reimbursements to owners of the tuberculous animals amounted to 197,000 francs (about $39,400); in 1906 it was more than 1,000,000 francs (about $200,000). That is, in seven years, the annual indemnities have been multiplied by nearly six. There is now under consideration a proposition to increase the indemnity so as to lay on the treasury a fresh charge of 300,000,000 francs, or $60,000,000. This would not really hinder the progress of tuberculosis, as is shown by the fact that, since 1898, the number of tuberculous animals has not diminished. The owner who receives compensation when a tuberculous animal is killed is indifferent to the progress of tuberculosis. Moreover, the owners of tuberculous animals report them for slaughter only when they have ceased to give milk and are consequently no longer a danger. The law, then, is useless. It would be better to suppress the government indemnities, and instead to offer premiums to the dairymen who are really trying to suppress tuberculosis, as is done in Germany, where government reimbursement has been advantageously replaced by mutual insurance against confiscation of meat at the slaughter-house.

The International Sanitary Office.

In December, 1907, an International Sanitary Conference met at Rome to create the International Sanitary Office, agreed on by the Paris Conference of 1903, for the collection, publication and distribution among the participating governments of information in regard to the progress of infectious diseases. Out of the 21 countries which took part in the convention of 1903, only 13, including the United States of America, participated. It was decided that the international office should be located at Paris and have an annual income of 150,000 francs, or $30,000, to be supplied by the contributions of the governments concerned. On November 4 this office was opened by the Minister of Foreign Affairs, under the presidency of M. Barrère, French ambassador to Italy. M. Santoliquido, the Italian delegate, has been unanimously selected as president of the permanent committee.

School for Nurses.

After the secularization of the hospitals, the attempt was made to form a body of trained secular nurses. Dr. Bourneville especially endeavored to organize courses for male and female nurses. The free public hospitals, however, were obliged to accept any young women who presented themselves, without any other guarantee than their good will. The creation of a real school for nurses was necessary. At the Salpêtrière Hospital a model school for nurses has been opened, at which young girls intending to take up a hospital career, may, after two years of study, obtain a nurse's diploma entitling them to employment in hospitals. The school can receive 150 young girls. The equipment leaves nothing to be desired. Each pupil has her own room, heated by steam, lighted by electricity, and furnished with all modern comforts.

BERLIN LETTER.

(From Our Regular Correspondent.)

Berlin, Oct. 22, 1908.

Occupations for Women.

The efforts of women to secure for themselves a satisfactory occupation and a suitable position in life are taking a wider scope. Lately women have taken training to fit themselves for scientific assistants in the medical laboratories. In hygienic institutes they prepare the bacterial culture media, supervise the bacterial cultures, etc. In the laboratories for gynecology and surgery they prepare microscopic sections and stain and imbed preparations. In a similar manner they are employed in chemical and other laboratories. The directresses of the information bureau for the interests of women, established at Berlin by the German federation of women's clubs and of the similar information bureau for women in Frankfurt a. M., are now conducting an investigation with regard to the introduction of such female assistants in scientific laboratories in order to obtain a comprehensive view of this field of labor. From the reports which are sought from all the medical institutes, large hospitals and private laboratories, the foundations for a central information and employment agency will be secured.

Care of Cripples.

As a supplement to our former communication regarding the care of cripples, it may be added that the census of juvenile cripples undertaken under a ministerial decree has shown the existence of 51,000 cripples under the age of 15 years in Prussia. On the basis of this material the officials of the Prussian provinces are directed to further investigate the causes and extent of the distress among cripples and to take measures in connection with the societies and institutions already devoted to the care of cripples, for the cure and instruction of juvenile cripples. At the expiration of a year the authorities are to report regarding the results of the investigations undertaken and the success of these measures to relieve the poverty entailed by the crippled condition. When these reports have been made out and presented, legislation may follow for the care of cripples, but in the mean time this task, properly belonging to the public charities, is left to private benevolence.

Pharmacology

ANOTHER SCHEME TO WORK THE DOCTOR.

Aicsol—Anti-Phthisis (Lloyd)—Lloyd's Specific. With Comments Also on the National Fraternal Sanitarium.

Of "consumption cures" there seems no end. Nostrum exploiters of all grades, from the veriest street-corner faker to the *soi disant* dispenser of "ethical proprietaries," seem to find in "curing" tuberculosis an illimitable field for their talents. The methods by which these fakes are worked up differ in no respect from that of many other similar means of depriving the public, simultaneously, of both health and money. The so-called ethical preparations are "advertised solely to physicians"—that is, so long as medical men will aid and abet the manufacturers in marketing the preparations. By the time the medical profession has awakened to the fact that once more it has been humbugged, the exploiter has completed his plans to introduce his wonderful remedy ("Used by all the Leading Physicians!") direct to the public.

The J. Q. Lloyd Chemical Company of St. Louis seems to be at present in the transition stage. As an offspring of the fertile brain of one J. Q. Lloyd, who calls himself a chemist and bacteriologist, the nostrum was originally marketed as "Lloyd's Specific." It was introduced in a way that was as clever as it was unscrupulous.

METHOD I.—WORKING THE SANITARIUM.

The National Fraternal Sanitarium at Fraternal City, N. M., an institution for the treatment of tuberculosis, owed its existence largely to fraternal organizations of the United States. This sanitarium, which was largely in the hands of laymen, was used by the J. Q. Lloyd Chemical Company as a means of exploiting its product. Letters written on the official stationery of the sanitarium and signed by its president—who was not a physician—were sent out, notifying the tuberculous

public that the institution would not be open for the reception of patients for some months, and suggesting that in the meantime Lloyd's Specific should be used. Whether the president of the National Fraternal Sanitarium was guilty of any intent to deceive or was simply afflicted with a lack of worldly wisdom, it was not possible to determine.

METHOD II.—THE TESTIMONIAL DODGE.

After the J. Q. Lloyd Chemical Company had utilized the National Fraternal Sanitarium to the limit, another tack was tried; that hoary and venerable standby of the nostrum dispenser—testimonials. The name of the preparation was changed to Sol. Anti-Phthisis (Lloyd), and advertisements appeared in medical journals. In this connection an interesting side-light was thrown on the inner workings of testimonial factories by one of our correspondents.

This correspondent had received a sheet of paper over a yard long and two feet wide, on which was printed a "proof" of more than one hundred typical testimonials of Lloyd's preparation; but no names or addresses were appended to the testimonials. In a letter accompanying the proof, Lloyd referred to the "printer's proof of your letter marked (X) with others," and asking "do you object to date and town being placed on above letter? . . . will not allow your name to be used or known." As a matter of fact, there was no testimonial marked "(X)," and moreover, our correspondent had never written a letter to the company. The evident intent was to catch careless and unwary physicians and thus compile an imposing list of testimonials.

About the time Lloyd's Specific was rechristened Sol. Anti-Phthisis (Lloyd), the preparation was submitted to the Council on Pharmacy and Chemistry for admission to the list of New and Nonofficial Remedies. While the reasons for its rejection were numerous and evident, the one given the J. Q. Lloyd Chemical Co. was that the remedy conflicted with the rule that bars an article "whose label . . . contains the names of diseases in the treatment of which the article is indicated." Lloyd's Specific, *alias* Anti-Phthisis (Lloyd), then again changed its name and became Aicsol (Lloyd), and postcards were sent broadcast to physicians, carrying the impression that the preparation was now eligible to the list of New and Nonofficial Remedies.

METHOD III.—MAIL-ORDER TREATMENT.

This was in November, 1907. The latest developments show that Lloyd's Specific, *alias* Anti-Phthisis (Lloyd), *alias* Aicsol (Lloyd), has not yet completed its nomenclatorial evolution. As the following letter shows, it is to be sold "under another name" and "direct to consumptives" "on the mail-order plan"!

OCT. 7, 1908.

Dear Doctor:—Photographs sent under separate cover show my work in part.

I propose to organize, at once, a stock company under the laws of Missouri with $200,000.00 capital stock, par value $10.00 per share, full paid and non-assessable, which will be known as the "Lloyd Chemical Company." Of this $200,000.00 capital stock I will retain $80,000.00 (40 per cent.) for my formula, etc. (I have refused $100,000 cash from one of the largest pharmaceutical houses in the United States for the formula.) The balance $120,000 will be sold at par. Of this amount I am offering $50,000.00 to the physicians, payable one-half cash with subscription, balance thirty days.

You have used Aicsol (Lloyd), and know the results obtained. Physicians are prescribing it and it is handled by 35 jobbers. Sales are steadily increasing, and with the *public taking it under another name*, what are the results? Simply more business, that's all.

The plan is to advertise Aicsol under another name, through the daily and weekly newspapers, farm journals and magazines as reading matter and not glaring ads., selling direct to consumptives at so much per monthly treatments, say about $5.00 per month, *on the mail-order plan*. Under this method no money will be thrown away on salesmen, bill posting, drug-store displays, large discounts and other unnecessary expenses that would be incurred under different methods. Money will be received in advance from the consumer. . . . If this appeals to you, buy stock in the company. . . . Many requests for stock have been received from physicians. . . .

Respectfully,

JUDD Q. LLOYD.

[The italics in the above are ours,—ED.]

Has the J. Q. Lloyd Chemical Company found the medical profession so "easy" that it imagines it can persuade physicians to buy stock in a "Consumptives Cured by Mail" concern? It would seem so from the above letter, which is being sent to physicians throughout the country. Yet we trust that, if not deterred by ethical reasons from having their names connected with such a concern, good business judgment will cause physicians to hesitate before going into a mail-order business, whose dividends are to be derived from helpless consumptives. If physicians fail to "bite," Mr. J. Q. Lloyd, chemist, bacteriologist and company promoter, may wish he had accepted the "$100,000 cash from one of the largest pharmaceutical houses in the United States" for his "formula"!

METHOD IV.—THE "SPECIAL ARTICLE" DODGE.

The latest letter indicates that the perennial crop of "suckers" is biting—provided, of course, that J. Q. Lloyd is to be believed. A letter dated November 13 is now being circulated which states that "to date we have sold $40,00 worth of stock. . . . . You will notice instead of one-half cash and one-half in thirty days, as the previous one read, we have changed this one to 10 per cent. cash and 10 per cent. a month, as we have practically a sufficient amount to assure success. . . . Under separate cover we are sending you copy of one of our largest daily newspapers, *The Star*, containing a full page announcement of our discovery. This write-up is given us *gratis*."

The newspaper referred to devoted a full page to the exploitation of the J. Q. Lloyd "cure for consumption." The "article" purports to be the result of a reporter's visit to the Lloyd "laboratory," where the journalist learned many wonderful things.

"He [J. Q. Lloyd] showed 'Bridget,' a black and white collie dog, asserting it had been inoculated with consumption and cured four times."

Evidently "Bridget" is getting the "cure" habit. But it is with monkeys that Chemist Lloyd is most successful. After inoculating a few of the simians, they all showed fear as though the inoculated animals had told their companions.

"It bears out my theory," said Bacteriologist Lloyd, "Darwin certainly was right in saying that man sprang from monkeys. Those animals know as much as a good many men."

One is hardly surprised to find that Promoter Lloyd has a poor opinion of the intelligence of his fellow men. J. Rufus Wallingford, it will be remembered, felt the same way. Possibly, too, the ease with which Lloyd makes "monkeys" of some men, strengthens his belief in the Darwinian theory—on the principle of "reversion to type."

But to make clear to the lay mind the "herculean task" he had accomplished in destroying the "tubercular baccillus:"

"The surprising statement was made by Lloyd that sunshine will not kill the germs of tuberculosis. He declares he has . . . actually burned the germs to a charred mass . . . and then could not kill the germs."

How grateful, therefore, the hapless sufferer should be that by means of Lloyd's Specific he may be cured without having to undergo the trying ordeal of cremation. But what is the formula? Unfortunately, the reporter is not permitted to tell. When he called President Lloyd opened the door only part way.

"An invitation to enter was given after the newspaperman had promised not to violate medical ethics by publishing the name of the solution. . . ."

Still we are given an inkling of the fearful and wonderful composition of this potent remedy.

"Some of the ingredients of the preparation are 'ic' acids, one of which, except by Lloyd's method, is said to explode whenever an attempt is made to combine it with alcohol. This

feat in medico-chemistry Lloyd claims to have accomplished, although it has taken years of study and experiment to arrive at the result."

Had the reporter but known it, J. Q. Lloyd seems to have accomplished an even greater "medico-chemical" feat. For has he not discovered the philosopher's stone—whereby the baser metals of deception, quackery and humbug are transmuted into gold?

The New French Pharmacopeia.

After an interval of nearly a quarter of a century, a new edition of the French pharmacopeia has appeared. In this interval one supplement was issued in 1895. The French Codex is published under nearly the same auspices as is the United States Pharmacopeia, being the product of a joint committee representing the important medical and pharmaceutical bodies of the republic. It differs from our standard in the fact that it is published by the authority of the government, and has, therefore, greater legal force.

As is to be expected, the revision shows great changes. About 500 antiquated galenical preparations and about 90 chemicals have been discontinued. A new department is introduced which contains five animal serums, tuberculin and antipest vaccine. A section is also devoted to veterinary medicines. For the majority of the remedies Latin names are given as secondary titles, the leading titles being, of course, in French. In contrast to our own pharmacopeia is the number of complex mixtures that have been retained or admitted. Changes in the strength of preparations, very similar to those made in the last edition of the U. S. Pharmacopeia have been made in accordance with the decisions of the Brussels Conference in 1902 for the unification of the formulas of heroic remedies. The changes made usually result in doubling the previous dose of the preparation.

Conservatism has been shown in the admission of the newer synthetics, though a few have been admitted which are still unofficial in the U. S. Pharmacopeia. Among these may be mentioned: adrenalin (adrenalinum), acetylsalicylic acid (aspirin), antipyrine salicylate (salipyrin), beta-naphthol benzoate (benzonaphthol), beta-naphthol salicylate (betol), acetyl para-aminosalol (salophen), methylacetanilid (exalgin). Phenacetin receives the name oxyethyl-para-acetanilid, thus recognizing it as a derivative of acetanilid.

A number of chemicals find a place in the Codex, which have not been recognized by our pharmacopeia. Among these are picric acid, digitalin, sodium cacodylate, sodium methylarsenate, picrotoxin, quassin, trioxymethylene (paraformaldehyd) and vanillin. Digitalin is given the name digitaline crystalise and is practically the same as digitoxin.

The preparation which was formerly official (homolles digitalin) is no longer recognized. This important change indicates an approach to uniformity in the digitalis preparations, although the confusion of names is not thereby diminished. Three preparations of this principle are given. A powder containing 1 per cent. of digitalin and an alcoholic solution containing one-tenth of 1 per cent. The powder is made into granules, each of which contains one-tenth of a milligram (1/670 grain) of crystallized digitalin.

For the first time a table of maximum doses is included. This represents the highest usual therapeutic dose. If a physician believes that this dose ought to be exceeded he will attract attention by adding "*Je dis telle dose*" ("I intend this dose"). The table includes, for a large number of medicines, the maximum doses for a single administration and for twenty-four hours.

Will Aid Pharmacopeia.

The Academy of Medicine of Cleveland, believing that the cooperation of the U. S. Public Health and Marine-Hospital Service with the Committee on Revision of the U. S. Pharmacopeia will tend to make the forthcoming revision of the Pharmacopeia more valuable to physicians, has voted to express its appreciation of the steps which Surgeon-General Wyman has taken to further this object, and to hope that other medical societies will endorse Dr. Wyman's cooperation.

Correspondence

Records of Radiographic Work.

OMAHA, Nov. 9, 1908.

To the Editor:—I wish to call the attention of physicians engaged in radiography to a system of correct recording. There has been too much guesswork in the various procedures that are thought necessary. Many have argued that each exposure must be studied separately and that there were so many things to be taken into consideration that no attention should be given to any previous similar case.

When I began this work I followed this method and usually spoiled two or three plates before getting one that was satisfactory. While I did my work in this way it never appealed to me as being anything but a slipshod, careless method and one not in accord with my sense of order and precision.

I now keep a careful record of each plate taken and find the following to be true, viz.: Given a patient weighing 150 pounds, with fleshy hips, a high vacuum tube with a five-inch spark gap, on a 110-volt current, if a one and a half minute exposure with four and a half milliamperes of current going through the tube produces a good negative, we may expect the same results in the next patient under similar conditions.

Of course there may be some variations along different lines which can not be easily recognized, as a difference in the penetrating power of the tube, or in the density of the tissues, etc., but these are so slight as scarcely to be considered.

In case all the conditions in the second case are not in accord with those of the first, proper allowance must be made, thus reducing the necessity of guesswork to a minimum.

When a satisfactory negative has been taken, a tag is pasted on one corner showing the name and weight of patient, number of milliamperes used, length of spark gap, time of exposure, distance of tube from plate, date, and name of physician referring the patient. A card is also made showing the patient's name, No. of plate, date, date of accident, kind of plate, diagnosis, number of milliamperes, weight and age of patient, time of exposure, distance of tube from plate, name of physician referring the patient, and remarks.

The plates are filed in a cabinet, alphabetically, where they can be referred to easily. Should a difficult case appear—suspected kidney stone, etc.—it is an easy matter to refresh the memory by referring to other similar cases as shown by the card index and tagged plates.

R. D. MASON, M.D.

Psychotherapy.

87 MADISON AVE., NEW YORK, Nov. 9, 1908.

To the Editor:—In the recent discussion concerning the Emmanuel movement a well-known neurologist protests against the assumption that ministers have a power to deal with disease therapeutically which is beyond that of one who devotes one's life to the study of disease. His critics reply that ministers have an insight into people's minds and an ability to affect them emotionally that physicians as a rule do not have.

The trouble is that medical students in America are graduated without the slightest notion that a considerable portion of the patients that will come to them are afflicted with mental troubles that require methods of treatment of which they have never even heard. Most of the cases of hysteria and many of "neurasthenia" are caused directly by past or present emotional experiences. Frequently the patient refuses to reveal such experiences; often he does not know them himself. How many physicians know of the method of psychanalysis of Dr. Jung by which such experiences are revealed against the person's will? How many know of the psychotherapeutic methods of Professor Freud by which the influences of buried experiences are removed?

Again, hypnotic suggestion is a valuable method of treatment; yet it is probably safe to say that the American student learns from his professors either that it is a wonderful but dangerous cure-all or that it is a piece of quackery. He remains ignorant of the fact that it is a definite therapeutic procedure not more difficult or dangerous than a hypodermic injection and no more of a cure-all than anything else is. In Berlin Professor Ziehen teaches the students in the Psychiatric

Institute to prescribe hypnotism when it is indicated. Professor Kraepelin does exactly the same thing in Munich. In Zurich Dr. Jung gives a regular course for the medical students.

Every physician should be familiar with these methods of treatment. He does not need to practice them, but he should know when they are to be advised in order that he may send the patient to a specialist. Instruction in these subjects should certainly be introduced into the medical schools.

E. W. SCRIPTURE, M.D.

Psychology in Disease.

87 WOODLAND ST., WORCESTER, MASS., Nov. 6, 1908.

To the Editor:—In connection with a study which is being made of the interaction of psychic and physical factors in organic disease, I will be grateful to members of the profession who will furnish instances in which the progress of the disease is apparently intensified, lessened, or modified by the mental attitude of the patient, or of friends and attendants. Cases are desired in both acute and chronic *organic* diseases of all kinds, except of the nervous system itself, in which close causal relations seem to exist between the mental state and progress of the disease, especially when marked emotional states, as fear, anxiety, undue concealment, depression, hope, joy, etc., are salient symptoms.

C. A. OSBORNE, M.D.

"Pin Imbedded in Vein."

OKLAHOMA CITY, Nov. 12, 1908

To the Editor:—In THE JOURNAL for Oct. 31, 1908 (page 1509), Dr. H. La Mont Youtz reports a case of a pin imbedded in a vein for four years. I believe that Dr. Youtz's conclusions are possible, but not probable. I think that it is an accepted fact that a foreign body imbedded in the tissue of the body becomes either absorbed and supplanted by fibrous tissue or encapsulated. A steel needle could not be absorbed; it would therefore become encapsulated. Dr. Youtz tells us that there was no bleeding at the proximal end of the cord which inclosed the needle, but that bleeding was marked when the distal end was cut, and on this circumstance largely he seems to base his conclusions that the needle was within the vein. Now, if the needle had been within a vein and the function of the vein destroyed or the vein obliterated where the needle rested, the blood current would not only have been cut off at the proximal end, but also at the distal, to a point as far from the distal end of the needle as the reception of the first collateral to the obstructed vein. In my opinion, the cord in which the needle rested and which Dr. Youtz concluded was a vein was simply the capsule which Nature had thrown about the needle and which would resemble, in its gross appearance, an obliterated vessel.

HARRY COULTER TODD, A.M., M.D.

Book Notices

THE AGE OF MENTAL VIRILITY. By W. A. Newman Dorland. Cloth. Pp. 211. Price, $1.00. New York: The Century Co., 1908.

Dorland's investigations into the period of the acme of mental activity, as shown by the records of 400 famous men of modern times, were occasioned by a conversation regarding the increasing American tendency "of relegating the older and middle-aged men to the oblivion of 'innocuous desuetude,' in order that the more progressive and aggressive young men might be given a clear track in the rush to the front." The inquiry is full of interest and perhaps, for many of us, also of surprises. Dividing men into two groups—the workers and thinkers, corresponding, respectively, to the synthetic and analytic types of mind—Dorland investigates the following questions: At what age did a given individual begin to show evidence of mental activity along lines of original research? When did he accomplish the greatest work of his life? How long did his mind continue to functionate and produce in the chosen sphere of activity? Dorland then quotes Osler's famous dictum, and devotes a chapter to showing what the world would have missed in great works had the lives of all the individuals ceased at the respective periods of 70, 60, 50 and 40 years. He next discusses the characteristics and relations of genius and insanity and the brain of genius, and concludes with a table giving the date at acme of activity, the magnum opus, age at cessation of work, duration of mental activity, and date of death of 400 of the world's greatest thinkers and workers. The book is a monument of literary research and, moreover, contains some careful generalizations.

GLANDULAR ENLARGEMENT. By Arthur Edmunds, M.B., M.S., B.Sc., Lond., F.R.C.S. Eng., Surgeon to the Great Northern Central Hospital. Cloth. Pp. 230, with illustrations. Price, $4.50. London: Oxford University Press, 1908.

Although this is not an exhaustive treatise, it is a most commendable monograph. The anatomy and distribution of lymphatic and lymph glands are described, and then the following pathologic conditions: Cellulitis; erysipelas; acute infection of lymph glands; retropharyngeal abscess; glandular fever; Still's disease; lymphatic enlargement in general diseases, plague and syphilis; tuberculous lymphatic glands; operative treatment of the glands in the neck; vaccine treatment; diseases of the thymus; surgery of the thoracic duct; lymphatic insufficiency; filariasis; Hodgkin's disease; lymphangio-endothelioma; lymphosarcoma; operative treatment of secondary malignant glands and treatment of inoperable malignant glands.

The clinical course—or, perhaps, it would be better to say, courses, for in most diseases cases differ much from one another—is not as fully dealt with as is desirable. The bringing together in one volume a consideration of the diseases of the lymphatic system, however, is a benefit and helps the reader to unify his knowledge acquired from various sources.

Edmunds advises opening retropharyngeal abscesses, not through the mouth, but externally, and describes the operation fully. He sensibly asserts the uselessness of the removal of tuberculous glands of the neck unless the sources of infection, commonly the tonsils, adenoid vegetations or carious teeth are first removed. Often if these are removed the glands of the neck diminish in size, the disease becomes quiescent or is cured and removal of the glands is unnecessary.

LEHRBUCH KLINISCHER UNTERSUCHUNGSMETHODEN FÜR STUDIERENDE UND AERZTE. By Theodor Brugsch, Assistant der II. mediz. Universitäts-Klinik, in Berlin, and Alfred Schittenhelm, a. o. Professor der inneren Medizin, in Erlangen. Part I. 320 pages, 351 illustrations. Parts 2 and 3, 629 pages, 350 illustrations. Paper. Berlin: Urban & Schwarzenberg, 1908.

The importance of diagnosis as a necessary preliminary to prognosis and treatment is readily admitted; the physician skilled in diagnosis need fear no invasion of his province by fads like Eddyism, New Thought, etc. One who has gained by exact means of investigation a clear insight into the actual conditions present in a given case is not likely to base his therapeutic measures on the absurd and exaggerated claims of the nostrum-vendor. Diagnosis is easily the first among the medical arts, and also one of the most progressive. It calls to aid all the other sciences and demands a knowledge of physics, chemistry, histology and biology in all its branches, as well as wide acquaintance with clinical medicine and surgery. So varied are its requirements that most of our textbooks on the subject are special text-books, giving a partial view only, and covering some particular field. Especially there has been a tendency to separate the laboratory investigations from those at the bedside, with the effect of slighting one or the other. The busy practitioner, it is often said, has not time to perfect himself in laboratory technic and must leave the decision in many cases to the laboratory specialist. It must be remembered, however, that, as a rule, the practitioner has ample time to acquaint himself with technic before he becomes busy, and he can hardly be considered as fit to make a final diagnosis until he has become acquainted with the resources as well as the limitations of all the diagnostic methods.

There is, therefore, good reason for an exhaustive consideration and comparison of all diagnostic measures in one work, and that is what we find in the work before us. It comprises all methods of diagnosis, physical, chemical, microscopic, bacteriologic, radiographic, and all these are treated with a thoroughness that promises to make the work a standard for some time to come. It is thoroughly up to date. Methods which have

been published within the last two years, as, for instance, electric cardiography, and the determination of the viscosity of the blood by the method of Determann, are described and fully illustrated.

The thoroughness with which the work has been done is apparent on every page. One may search in vain through many standard works on diagnosis for the relative measurements of various parts of the body which are given in this work. The relation of height and weight to age, data which, while they do not serve to establish any definite disease, are often desired by the practitioner, are given a place. The treatment of the investigation of the pulse appears to be more complete than that found in many special works.

While some methods which have been extensively recommended and are without doubt useful in experienced hands, have failed to receive notice, the instances are not sufficiently numerous to impair the usefulness of the work.

THE CAMPAIGN AGAINST TUBERCULOSIS IN THE UNITED STATES. Including a Directory of Institutions Dealing with Tuberculosis in the United States and Canada. Compiled by Phillip P. Jacobs, under the direction of the National Association for the Study and Prevention of Tuberculosis, by aid of the Russell Sage Foundation for the Improvement of Social Conditions. Cloth. Pp. 467. Price, $1.00. New York: Charities Publication Committee, 1908.

This volume was compiled under the direction of the National Association for the Study and Prevention of Tuberculosis (Russell Sage Foundation), and contains a directory of sanatoria, hospitals and day camps for the treatment of tuberculosis in the United States and Canada; lists of insane asylums and penal institutions making special provision for tuberculous inmates, and a list of dispensaries and clinics for the special treatment of tuberculosis. The volume also contains a roster of the associations and committees organized in the United States and Canada for the study and prevention of tuberculosis, as well as a digest of legislation affecting tuberculosis, whether state or municipal. Typical laws are given as models on which legislation may be based, including the New York, Maryland, District of Columbia and Wisconsin tuberculosis laws. The appendix contains some valuable tables and charts showing the growth of the antituberculosis movement. On Aug. 1, 1908, there were 240 tuberculosis sanatoria in the United States, with accommodation for 14,000 patients, whereas, three years ago, there were only 115 sanatoria, with beds for 9,000 patients. The volume contains much valuable information and is practically indispensable for any one desiring to keep track of the present movement for the suppression of tuberculosis. The book is sold at actual cost price.

LIFE INSURANCE AND GENERAL PRACTICE. By E. M. Brockbank, M.D. (Vict.), F.R.C.P. Lecturer in Materia Medica and Therapeutics, Victoria University of Manchester. Cloth. Pp. 288. Price, $2.50. New York: Oxford University Press, 1908.

The meritorious series of Oxford medical publications receives an excellent addition in the manual of Dr. Brockbank. Part I, devoted to a consideration of the routine of medical examinations for life insurance, contains also a concise and plain exposition of physical diagnosis and is therefore of interest to the general practitioner. Part II treats of impaired lives and considers in detail the subjects of heredity, height and weight and the relation of important diseases to life insurance. The more modern views of tuberculous diseases, cancer, syphilis and other organic diseases are outlined, with here and there deductions from the author's experience. The important bearing of alcohol addiction on applicants for life insurance is emphasized. Short chapters on sea and war risks and the special dangers of life in the tropics conclude the work.

CHOLÉCYSTO-PANCRÉATITE. Essai de Pathogénie, by Le Docteur Reine Mangeret, Ancien Interne des Hôpitaux de Paris. Paper. Pp. 149, with illustrations. Paris: G. Steinheil, 1908.

This monograph is devoted to the explanation and justification of the theory of Thiroloix, that in cases in which pancreatitis results from cholelithiasis the inflammation of the pancreas arises from an infection propagated through the lymphatic channels from the gall bladder to the pancreas. The prevailing theories are first described and discussed and then the author produces the evidence for the theory of his former teacher which he ranges under the facts of pathologic anatomy, symptomatology and finally relates the results of experiments made by Thiroloix and himself by which the possibility of such a spread of infection is definitely proved. The details of experiments and histories of cases are given, together with a full bibliography.

THE PHYSICIAN'S VISITING LIST FOR 1909. Pocket size. Flexible leather, with pocket and flap. Pp. 114. Price, $1.00. Philadelphia: P. Blakiston's Son & Co.

To issue the fifty-eighth annual edition of a book, as is here done, is something of a credit. The neat little volume provides a clear method for recording the nature of charges made and provides ample space for other memoranda, such as vaccination and obstetric engagements, births, deaths, cash accounts, etc. There are included the usual data on incompatibility, treatment of poisonings, tables of weights, measures and doses, etc.

Medical Economics

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fourth Month: Second Weekly Meeting.

DISEASES OF THE HIP.

COXITIS.—Etiology: Trauma, osteomyelitis, tuberculosis, acute infections, syphilis.

COXITIS TUBERCULOSA.—Symptoms: Onset, lameness, night cries, etc.; reflex spasm, atrophy, swelling, shortening, malposition, pain, temperature. Treatment: General, diet, fresh air, etc.; local (1) extension, (2) fixation, (3) correction of deformities, details of treatment.

COXA VARA.—Etiology: Rickets, arthritis deformans, osteomyelitis, tuberculosis, traumatism. Symptoms: Unilateral or bilateral. Limp, pain, shortening, position of trochanter, rotation. Use of *x*-ray.

DISEASES OF THE KNEE.

ACUTE SYNOVITIS.—Serous, seropurulent or purulent. Symptoms, treatment of each.

CHRONIC SYNOVITIS.—Treatment.

INTERMITTENT HYDROPS.

TUBERCULOSIS OF KNEE JOINT.—Symptoms: Reflex spasm, atrophy, swelling, shortening, malposition, pain, lameness. Treatment: Extension, fixation, injections, Bier's congestion-hyperemia. Operative treatment.

DISEASES OF ANKLE AND FOOT.

ACUTE SYNOVITIS.—Simple and purulent.

CHRONIC ARTHRITIS.—Rheumatism, arthritis deformans, syphilis, tuberculosis.

DISEASES OF THE UPPER EXTREMITY.

SHOULDER.

SEROUS ARTHRITIS, Fibrinous Arthritis.

PURULENT ARTHRITIS.—Etiology: Injuries, osteomyelitis, infectious diseases. Treatment: Aspiration and injection, arthrotomy, excision, amputation.

TUBERCULOUS ARTHRITIS.

ARTHRITIS DEFORMANS.

NEUROPATHIC ARTHRITIS, in syringomyelia.

LOOSE SHOULDER JOINT.—Due to traumatism, operation, inflammatory effusion, deforming or neuropathic arthritis, injury to nerves, separation of epiphysis.

ELBOW.

ARTHRITIS.—Acute, serous, purulent and syphilitic.

TUBERCULOSIS.—Diagnosis, treatment.

WRIST AND HAND.

RHEUMATISM.

ARTHRITIS DEFORMANS.

SYPHILIS.

TUBERCULOSIS.

NEUROPATHIC ARTHRITIS.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

FLOUR FOR DIABETICS.

OGDEN, UTAH.

To the Editor:—1. What do you understand is a suitable flour for diabetics? 2. Should the iodin test show no trace of starch? 3. Where is such flour to be secured? 4. Can it be made by the ordinary flour mill? R. S. JOYCE, M.D.

ANSWER.—1. A flour suitable for diabetics is one that contains either no starch or a very low percentage, according to the stage of the disease. In the later stages of the disease in which there is danger of acidosis and diabetic coma, a small amount of carbohydrate (starch, sugar, dextrin) is probably not only harmless, but is of advantage. This fact is often distorted by firms selling so-called diabetic flours containing a dangerously high percentage of starch.

2. Of the wheaten flours it is probably impossible to obtain one that will fail to respond to the iodin test for starch, although there are good gluten flours on the market in which the amount of starch is so small as to be practically negligible. Such a sensitive test as the iodin reaction is unnecessary. There are flours prepared from skimmed milk—casein—which are capable of being made into a kind of bread and which are starch-free. Interesting analyses of various diabetic flours and foods have been made by A. L. Winton of the Connecticut Agricultural Experiment Station, New Haven, Conn., the results of which are published in pamphlet form.

3. Of the flours and meals analyzed by Winton the following were found to contain a low percentage of starch:

Name of Flour.	Name of Manufacturer.	Percentage of Starch, Sugar and Dextrin
Barker's Gluten Food, A.	Herman Barker, Somerville, Mass.	4.46
Barker's Gluten Food, B.	Herman Barker, Somerville, Mass.	6.03
Almond Meal (from nuts)	Health Food Co., New York City.	7.18
Soja Bean Meal.....	Theo. Metcalf Co., Boston.....	8.95
Sanitas Nut Meal.....	Sanitas Nut Food Co., Battle Creek, Mich.....	8.94
Casoid Flour (from casein)	Callard, Stewart & Watt, (Thos. Leeming & Co., Agts.) New York.	0.00

Many other flours and meals analyzed were found to contain dangerously high percentages of carbohydrates, while some were no better in starch-content than ordinary wheaten flour.

4. While gluten flour can doubtless be made in the ordinary flour mills its manufacture can be commercially profitable only in connection with the manufacture of starch, thus avoiding waste of material.

JIREH DIABETIC FOODS.

ATLANTA, GA., Oct. 28, 1908.

To the Editor:—The enclosed circular of the Jireh Diabetic Food Co., was brought to me by a diabetic patient who wanted to know if the Jireh foods were really diabetic foods. Can you give me any information as to their value for such patients?

J. E. SOMMERFIELD, M.D.

ANSWER.—A. L. Winton, in a report of the Connecticut Agricultural Experiment Station on "Diabetic Foods," makes the following statements:

"Attention should be called to the preparations of Farwell & Rhines and of the Jireh Diabetic Food Company, which contain large percentages of starch, but are not especially rich in protein."

"Analyses fail to show any very decided advantage of the preparations of the firms named, for the use of diabetic patients, over ordinary wheat flour. Microscopic examination proved that all of them contained large amounts of wheat starch with no marked difference from that of wheat flour."

"The Jireh Diabetic Food Company designate their foods as 'starch-changed,' but our analyses and microscopic examinations do not indicate that the change, if any, is of a kind that renders the materials less objectionable for diabetic use."

The analysis of the Jireh Diabetic Flour, in this report gives the carbohydrate content (starch, sugar and dextrin) as 66.63 per cent. A safe flour for diabetic patients should not contain over 8 per cent. carbohydrate—preferably much less. See answer to query in THE JOURNAL, Sept. 12, 1908, page 932; also the abstract of Winton's report in THE JOURNAL, June 29, 1907, page 2198; also answer to query on the same subject above.

THE PHARMACOPEIA AND THE NATIONAL FORMULARY.

ERIE, PA., Nov. 7, 1908.

To the Editor:—Where can I purchase copies of the U. S. Pharmacopeia and of the National Formulary? What is the cost of each? J. B. HOWE.

ANSWER.—The last edition of the U. S. Pharmacopeia is sold by P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia; price, $2.50. The National Formulary is published by the American Pharmaceutical Association, Baltimore; price, $1.00. Either of these may be obtained through any bookseller.

The Physicians' Manual of the United States Pharmacopeia and National Formulary is designed to take the place of the two books mentioned where details are not wanted. It contains an epitome of the articles in both books in pocket-size hand-book form. It is published by the American Medical Association; price, 40 cents, postage paid.

SAFETY OF SOMNOFORM.

SPRINGFIELD, MO., Nov. 6, 1908.

To the Editor:—What information can you give as to the safety and mortality rate of somnoform as an anesthetic?

G. B. LEMMON.

ANSWER.—Somnoform is stated to be a mixture containing ethyl chlorid, 60 per cent.; methyl chlorid, 35 per cent.; and ethyl bromid, 5 per cent.; this and similar mixtures have been much used as anesthetics for dental operations. Its chief constituent is ethyl chlorid, which appears to stand in safety between nitrous oxid and ether. Eighteen deaths have been reported from ethyl chlorid, but the number of administrations is not accurately known, so that the mortality rate can not be stated positively.

DEFINITION OF ANAPHYLAXIS.

YONKERS, N. Y., Nov. 7, 1908.

To the Editor:—What is meant by the term anaphylaxis?

G. PINEGIN.

ANSWER.—Anaphylaxis is defined by Dorland's Medical Dictionary as "the state of lessened resistance to the action of a toxin or a drug, which sometimes follows infection or continued administration of the drug." The special phenomenon to which the term is usually applied is an increase of sensitiveness by which an animal which has received an injection of some protein reacts to a second injection, even of very small amounts of the same substance, made after a certain interval, with greatly increased violence, which may sometimes lead to fatal results.

PHYSICIANS' CARDS.

Some time ago THE JOURNAL quoted the amusing cards and letter-heads of a number of individuals. The following, in which we have altered the name and address, is worth adding to the collection:

J. Philadelphus Jones, M.D.
General Practitioner of
SURGERY AND MEDICINE
OFFICE:
ROOM 23, 1234 NINTH STREET
RESIDENCE, 41144 MIDDLE STREET
BUZZVILLE, CALIVADO.

LIFE FOUNDATION FELLOW SOCIETY SCIENCE, LETTERS & ART, LONDON
LIFE FELLOW AMERICAN ASSOCIATION ADVANCEMENT SCIENCE
MEMBER CALIFORNIA STATE MEDICAL SOCIETY
LIFE MEMBER CALIFORNIA ACADEMY SCIENCE
MEMBER AMERICAN MEDICAL ASSOCIATION
MEMBER TEXAS ACADEMY SCIENCE

SPECIAL ATTENTION GIVEN TO DISEASES OF WOMEN AND CHILDREN.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Nov. 14, 1908:

Kulp, J. S., major, ordered to Denver, for examination by an army retiring board.

Rafferty, Ogden, major, ordered to Ft. Bayard, N. M., for treatment at the Army General Hospital at that place.

Rockhill, E. P., capt., order for examination by an army retiring board revoked.

Zinke, S. G., capt., honorably discharged from the service of the United States with one year's pay, under the provisions of the Act of April 23, 1908.

Snyder, H. M., lieut., granted leave of absence for 15 days.

Stephenson, William, lieut.-col., Scott, G. H., Kilbourne, E. D., and Pife, J. D., capts., sailed on the *Sheridan* Nov. 5, 1908, from San Francisco for Manila.

Weed, F. W., capt., relieved from duty at Plattsburg Barracks, N. Y., and ordered to Fort Totten, N. Y., for duty.

Leilardy, J. C., M. R. C., relieved from duty at Ft. Lawton, Wash., and ordered to duty in the Philippine Division, sailing Dec. 5, 1908, from San Francisco.

Mount, J. R., M. R. C., granted leave of absence for one month, about Dec. 15, 1908.

Lincoln, H. F., M. R. C., relieved from duty at Ft. Sam Houston, Texas, and ordered to duty in the Philippine Division, sailing Dec. 5, 1908, from San Francisco.

Stephenson, A. V., M. R. C., ordered to proceed from San Francisco, to his home and report for further orders.

Jackson, T. W., M. R. C., sailed on the *Sheridan* Nov. 5, from San Francisco, for Manila, P. I., returning from leave of absence.

McCallum, F. M., M. R. C., having been found fit for duty, ordered to return to Honolulu, H. T., on first available transport.

Freeland, H. L., M. R. C., granted leave of absence for twenty days.

Burkhart, J. L., cont.-surgeon, ordered to his home, Grand Rapids, Mich., for annulment of contract.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending Nov. 14, 1908:

Lowndes, C. H. T., surgeon, detached from the *South Dakota*, and ordered home.

Shipp, E. M., surgeon, detached from the *Pennsylvania* and ordered home.

Hoen, W. S., P. A. surgeon, discharged from treatment at the Naval Hospital, New York, and ordered to the Naval Recruiting Station, Oklahoma City, Okla.

Short, W. H., asst.-surgeon, detached from the Naval Recruiting Station, Oklahoma City, Okla., and ordered to the *MacDonough* for duty in the Third Torpedo Flotilla.

Donelson, M., asst.-surgeon, detached from duty with the Third Torpedo Flotilla, and ordered to the *Celtic*.

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the fourteen days ended Nov. 11, 1908:

Stoner, George W., surgeon, granted 5 days' leave of absence from Oct. 23, 1908.

Clark, Taliaferro, P. A. surgeon, directed to proceed to Schuylkill Haven, Pa., for the purpose of examining an insane alien, Oct. 31, 1908.

Clark, Taliaferro, P. A. surgeon, directed to proceed to points in Pennsylvania, New Jersey and Delaware for the purpose of making medical examination of aliens, Nov. 5, 1908.

Clark, Taliaferro, P. A. surgeon, reassigned to duty at Philadelphia, to date from July 19, 1908.

Lavinder, C. H., P. A. surgeon, granted 2 days' leave of absence from Oct. 30, 1908, under Paragraph 191, Service Regulations.

Grubbs, S. B., P. A. surgeon, directed to proceed to New York on completion of duties in Paris, France, Nov. 9, 1908.

Billings, W. C., P. A. surgeon, directed to proceed to Arundel Cove, M.D., and report to commanding officer of the revenue cutter *Itasca* for duty, Nov. 3, 1908.

Schereschewsky, J. W., P. A. surgeon, reassigned to duty at Baltimore, to date from Nov. 2, 1908.

Frost, W. H., asst.-surgeon, on being relieved by P. A. Surgeon W. C. Billings, directed to proceed to Washington, D. C., and report at Hygienic Laboratory for temporary duty.

Stiles, C. W., Chief Division Zoology, Hygienic Laboratory, detailed to represent the service at the meeting of the Southern Medical Association, Atlanta, Ga., Nov. 10-12, 1908.

Abbott, F. C., acting asst.-surgeon, leave of absence for 14 days granted Oct. 15, 1908, amended to read 7 days from Oct. 11, 1908.

Alexander, E., acting asst.-surgeon, granted 14 days' leave of absence from Nov. 6, 1908.

Bailey, C. A., acting asst.-surgeon, directed to proceed to St. John, N. B., on or about Nov. 19, 1908, for medical examination of aliens.

Brinckerhoff, W. R., acting asst.-surgeon directed to proceed to Molokai Leprosy Investigation Station as often as the public business requires.

Carter, P. L., acting asst.-surgeon, granted 7 days' leave of absence from Oct. 26, 1908, under Paragraph 210, Service Regulations.

Fahey, Edward, acting asst.-surgeon, granted 19 days' leave of absence from Nov. 12, 1908.

Fisher, C. E., acting asst.-surgeon, granted 10 days' leave of absence from Nov. 6, 1908.

Gill, S. G., acting asst.-surgeon, granted 28 days' leave of absence from Dec. 4, 1908.

Goldthwaite, Henry, acting asst.-surgeon, granted 21 days' leave of absence from Nov. 5, 1908.

Gustetter, A. L., acting asst.-surgeon, granted 10 days' leave of absence from Nov. 15, 1908.

Hughes, C. W., acting asst.-surgeon, granted 30 days' leave of absence from Nov. 5, 1908.

Hume, Lea, acting asst.-surgeon, granted 10 days' leave of absence from October 24, 1908.

Hume, Lea, acting asst.-surgeon, granted 10 days' extension of leave of absence from Nov. 3, 1908.

Jackson, James M., Jr., acting asst.-surgeon, granted 13 days' leave of absence from Nov. 9, 1908, and 8 days' leave of absence, without pay, from Nov. 22, 1908.

Kimmet, W. A., acting asst.-surgeon, leave of absence for 30 days, granted Sept. 16, 1908, amended to read 25 days from Sept. 20, 1908.

Lyall, R., acting asst.-surgeon, granted 3 days' leave of absence without pay, from Nov. 3, 1908.

Nute, Albert J., acting asst.-surgeon, granted 1 day's extension of leave of absence, on account of sickness, Nov. 6, 1908.

Oast, B., acting asst.-surgeon, leave of absence for 27 days from Nov. 1, 1908, granted Oct. 22, 1908, amended to read 27 days from Nov. 4, 1908.

BOARDS CONVENED.

Board of medical officers convened to meet at the Marine-Hospital, Baltimore, Nov. 4, 1908, for the purpose of conducting a physical examination of an officer of the U. S. R. C. S.: Passed Assistant Surgeon J. W. Schereschewsky, chairman; Passed Assistant Surgeon J. T. Burkhalter, recorder.

Board of medical officers convened to meet at the Marine-Hospital, Seattle, Wash., for the purpose of examining alien, Joseph Ella; Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Nov. 13, 1908:

SMALLPOX—UNITED STATES.

California: Berkeley, Oct. 10-17, 1 case.
Indiana: Fort Wayne, Oct. 17-24, 1 case; Lafayette, Oct. 19-26, 1 case.
Kentucky: Lawrenceburg, Oct. 8-31, 8 cases, 1 death; Lexington, Oct. 18-24, 1 case.
Missouri: Carterville, Nov. 2, 6 cases; St. Louis, Oct. 18-24, 5 cases.
North Dakota: Bismarck, March 31-Sept. 30, 38 cases.
Ohio: Conneaut, town and township, Sept. 1-30, 6 cases.
Tennessee: Coulterville, Sept. 9-Nov. 4, 30 cases; Dowelltown, Sept. 16-Nov. 3, 29 cases.
Wisconsin: LaCrosse, Oct. 17-24, 3 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manola, Sept. 12-19, 2 cases, 4 deaths.

SMALLPOX—FOREIGN.

Arabia: Aden, Sept. 29-Oct. 12, 22 deaths.
Brazil: Pernambuco, Sept. 1-15, 45 deaths; Rio de Janeiro, Sept. 13-27, 1,279 cases, 587 deaths; Santos, Sept. 6-13, 11 deaths.
Canada: Halifax, Oct. 7-24, 1 case.
Egypt: Cairo, Sept. 30-Oct. 7, 7 cases.
India: Bombay, Sept. 8-15, 42 deaths; Sept. 22-Oct. 6, 2 deaths; Rangoon, Sept. 19-26, 1 death.
Indo-China: Saigon, Sept. 12-19, 3 deaths.
Italy: General, Oct. 5-18, 47 cases; Naples, Oct. 11-18, 3 cases.
Java: Batavia, Sept. 12-19, 2 cases.
Norway: Christiania, Oct. 3-10, 3 cases.
Russia: Moscow, Sept. 26-Oct. 10, 22 cases, 12 deaths; Warsaw, Sept. 19-26, 3 deaths.
Spain: Vigo, Oct. 10-17, 1 death.
Turkey: Constantinople, Oct. 11-18, 10 deaths; Smyrna, July 7-Oct. 6, 16 deaths.
Brazil: Pernambuco, Sept. 1-15, 1 death.
Mexico: Merida, Oct. 16-24, still present.

CHOLERA—INSULAR.

Philippine Islands: Manila, Sept. 12-19, 144 cases, 96 deaths; Provinces, 992 cases, 624 deaths.

CHOLERA—FOREIGN.

India: Bombay, Sept. 22-29, 1 death; Madras, Sept. 19-Oct. 2, 140 deaths; Rangoon, Sept. 19-26, 1 death.
Indo-China: Saigon, Sept. 12-19, 6 cases, 6 deaths.
Japan: Moji, Sept. 2-26, 51 cases, 31 deaths; Wakamatsu, Sept. 8-15, 6 cases, 3 deaths.
Russia: General, to Oct. 10, 22,295 cases, 10,252 deaths; Moscow, Sept. 26-Oct. 10, 3 cases, 2 deaths; St. Petersburg, Oct. 18-24, 21 cases, 12 deaths.
Straits Settlements: Singapore, Sept. 12-19, 2 cases.

PLAGUE.

Brazil: Rio de Janeiro, Sept. 13-27, 7 cases, 1 death.
Great Britain: Liverpool, Nov. 10, 3 cases, 2 deaths.
India: Bombay, Sept. 8-Oct. 6, imported, 73 deaths; Rangoon, Sept. 19-26, 3 deaths.
Indo-China: Saigon, Sept. 12-19, 34 cases, 29 deaths.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

CALIFORNIA: Los Angeles, Dec. 1. Sec'y., Dr. Charles L. Tisdale, Butler Bldg., San Francisco.

DELAWARE: Regular, Dover; Homeopathic, Wilmington, Dec. 8-10. Sec'y., Medical Council, Dr. Henry W. Briggs, Wilmington.

IOWA: Capitol Building, Des Moines, Dec. 8-10. Sec'y., Dr. Louis A. Thomas.

MARYLAND: Baltimore, Dec. 8. Sec'y., Dr. J. McPherson Scott, Hagerstown.

NEW HAMPSHIRE: Concord, Dec. 29-30. Regent, Mr. H. C. Morrison.

OHIO: Columbus, Dec. 8-10. Sec'y, Dr. George H. Matson.

PENNSYLVANIA: Musical Fund Hall, Locust St., Philadelphia, Dec. 1-4. Sec'y. of Medical Council, Dr. N. C. Schaeffer, Harrisburg.

VIRGINIA: Lynchburg, Dec. 15-18. Sec'y., Dr. R. S. Martin, Stuart.

Medical Education and Optometry.

That all practitioners in medicine should be required to have the same minimum amount of preliminary and medical education regardless of the particular system or mode of treatment to which they may adhere, is fairly well recognized and this is doubtless the solution of the whole problem of sectarian medicine. The general recognition of this point is due largely to the endless clamor of various sects in medicine for special requirements of education which were invariably lower than the standard for the physician's license.

It was the continuous demands by medical sects for separate boards that finally resulted in the adoption by New York of the so-called "medical unity bill," providing for a single board of medical examiners in place of three separate boards. The new law was fairly consistent in making no mention of,

or provision for, any sect in medicine. Its one apparently vulnerable point was its lack of clearness regarding optometry and followers of that sect have obtained a law defining and "regulating" the practice of "optometry," which, of course, provides for an educational standard far inferior to that of the medical practice act.

In a pamphlet protesting against such legislation, reprinted in the *Texas State Journal of Medicine*, November, 1908, C. S. Andrews, counsel to the Opticians' League of New York, presents some facts regarding optometry which are worth the attention of those interested in this problem. Mr. Andrews properly considers that optometry should be treated as are all other sects in medicine, and makes the following statement regarding the New York law:

"The 'medical unity bill' defines the practice of medicine in substance as the practice of the healing art in any form or by any method, and forbids the practice to any person not examined and licensed by the state. The plea for special privileges to treat disease after some one method that had been sought by osteopaths, vitopaths, somatopaths, osteotherapists, bone-setters and a score of other sects of medicine were declared to be inconsistent and misleading. The state wiped them all out of existence, when it declared that not until a man satisfied the state of his ability to diagnose disease and of his knowledge of human anatomy, physiology and chemistry could he be entrusted with the treatment of any of the ills to which flesh is heir."

Surely, no sect in medicine whose medical knowledge is limited to a branch of physics should be granted the privilege of examining and treating an organ so highly specialized and delicately constructed as the eye. It is well known that the first symptoms of several very serious diseases are discoverable by the eye examination, if made by a competent physician, and this at a stage at which the disease may often be cured by proper systemic treatment. Moreover, there are a large number of eye troubles which are not benefited by a mere fitting of glasses.

Let there be a fixed standard of preliminary and medical education, then make it obligatory on every practitioner of medicine regardless of what he may call himself. Let there be no special privileges.

Minnesota October Report.

Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at St. Paul, October 6-9, 1908. The number of subjects examined in was 11; total number of questions asked, 105; percentage required to pass, 75. The total number of candidates examined was 12, of whom 8 passed and 4 failed. Twenty-two reciprocal licenses were also issued at this examination. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
University of California	(1907)	84.9
Johns Hopkins University	(1907)	78.1
Harvard Med. School	(1906)	76.5
University of Minnesota	(1907)	75.5
Hamline University	(1908)	75.1
McGill University, Quebec	(1906)	81.5
McGill University, Quebec	(1908)	75.4
Laval University, Quebec	(1908)	76.2

FAILED.

University of Arkansas	(1907)	68.8
Louisville and Hosp. Med. Coll.	(1908)	61.4
Johns Hopkins University	(1907)	72.3
University of Minnesota	(1908)	71.2

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with
George Washington University	(1908)	Maryland
Northwestern Univ. Med. School	(2, 1908)	Illinois
Bennett Coll. of Ecl. Med. and Surg	(1906)	Illinois
Rush Med. Coll.	(2, 1906)	Illinois
College of P. & S., Chicago (1890) Wisconsin;	(2, 1906)	Illinois
	(1907)	Illinois
State University of Iowa	(1908)	Iowa
College of P. and S., Keokuk	(1898)	Wisconsin
Hospital Coll. of Med., Louisville	(1897)	Wisconsin
University of Michigan	(1885)	Iowa
University of Minnesota	(1905)	N. Dakota
University of Missouri	(1907)	Missouri
St. Louis Coll. of P. and S.	(1907)	Missouri
New York Univ. Med. Coll.	(1883)	New York
Medical Coll. of Ohio	(1907)	Ohio
Ohio Medical University	(1898)	Ohio
University of Vermont	(1891)	Wisconsin
Trinity Med. Coll., Toronto, Ont.	(1897)	N. Dakota

Virginia June Report.

Dr. R. S. Martin, secretary of the Medical Examining Board of Virginia, reports the written and oral examination held at Richmond, June 23-26, 1908. The number of subjects examined in was 9; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 130, of whom 100 passed and 30 failed. Six reciprocal licenses were granted at this examination. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Medical College of Alabama	(1899)*	
Columbian University, Washington	(1899)*	
Howard University	(1904)* (1907)	79
George Washington University	(1905) 83; (1908)	87
Hospital Coll. of Med., Louisville	(1907)	77
Louisville Med. Coll.	(1897)*	
Baltimore Med. Coll.	(1905) 76; (1906) 75; (1908)	75, 79
University of Maryland	(1905)* (1908)	79, 85
Johns Hopkins Med. School	(1908)	77
Leonard School of Med.	(1907) 75, 75; (1908)	76
Hahnemann Med. Coll., Philadelphia	(1906)	75
University of Pennsylvania	(1908)	83
Jefferson Med. Coll. (1906) 89; (1907)* (1908)	78, 79, 81,	85
University of Nashville	(1908)	76
Vanderbilt University	(1890)*	
University of Virginia	(1905) 85; (1907)* (1908)	75, 80
Medical Coll. of Virginia (1907) 81; (1908)	75, 76, 76, 77, 77, 78, 78, 78, 78, 79, 79, 79, 79, 79, 79, 80, 80, 80, 80, 81, 81, 82, 83, 83, 83, 83, 84, 85, 85, 86, 86.	
University College of Med., Richmond (1901)* (1907)	76; (1908) 78, 78, 78, 78, 79, 79, 79, 79, 79, 79, 79, 80, 80, 81, 81, 81, 82, 82, 82, 82, 82, 82, 82, 82, 82, 83, 83, 84, 84, 85, 86.	
University of Krakow, Austria	(1899)*	
Non-graduate	(....)	76**

FAILED.

National Medical University, Chicago	(1900)	60
Bennett Coll. of Ecl. Med. & Surg.	(1884)	50
College of P. and S., Keokuk	(1884)	60
Louisville Med. Coll.	(1898)	40
Kentucky School of Med.	(1894)	40
Hospital Coll. of Med., Louisville	(1904)	73
University of Louisville	(1902)	60
Medico-Chirurgical Coll. of Christ Institution, Baltimore.	(1904)	72
Baltimore Med. Coll.	(1907)	69, 71
College of P. and S., Baltimore	(1901)	50
College of P. and S., Boston	(1907)	58
St. Louis Coll. of P. and S.	(1891)	40
Leonard School of Med.	(1906) 69; (1908)	64, 69, 69, 73
Medical Coll. of South Carolina	(1901)	66.6
Meharry Med. Coll.	(1905)	72
University of the South	(1906) 73; (1907)	60, 71
Tennessee Med. Coll.	(1907) 74.3; (1908)	70
University of Virginia	(1907) 74, 75†; (1908)	73
Medical College of Virginia	(1908)	72, 73

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with
Columbian University, Washington	(1903)	Dist. Colum.
University of Maryland	(1906)	Maryland
Maryland Med. Coll.	(1905)	W. Virginia
Medical Coll. of South Carolina	(1905)	S. Carolina
University of Virginia	(1896)	Maryland
University Coll. of Med., Richmond	(1907)	W. Virginia

* Took oral examination.
** Registered before graduation was required of all candidates.
† Made less than 45 per cent. on surgery.

Utah October Report.

Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, October 5-6, 1908. The number of subjects examined in was 20; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 8, of whom 7 passed and 1 failed. Four reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
College of P. and S., San Francisco	(1908)	84.6
George Washington University	(1908)	83.4
Johns Hopkins Univ. Med. School	(1908)	81.7
College of P. and S., Baltimore	(1908)	82.9
Jefferson Med. College	(1907) 81.6; (1908)	75, 82.5

FAILED.

Jefferson Med. Coll.	(1908)	73.4

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with
University of Michigan	(1908)	Michigan
University Med. Coll., Kansas City	(1904)	Kansas
St. Louis University	(1908)	Illinois
New York University Medical College	(1888)	Iowa

Miscellany

The Histologic Appearance, in Secretion, of Cells of the Kidney in Diuresis.—In the *Internationale Monatsschrift für Anatomie und Physiologie*, 1908, xxv, Nos. 4-6, Dr. Benedetto Pizzini attempts, by means of microphysiologic experiments, to present additional evidence to confirm the well-known Heidenhain experiments, which first set forth scientifically the secretory function of the cells of the tubules of the kidney, by intravenous injection of certain coloring matters, which he found were excreted by the cells of the convoluted tubules. He makes close histologic observations on the changes produced through the action of diuretics in the epithelium of the tubules, particularly the proximal convoluted tubules and the descending arm of the loop of Henle. The epithelium of the proximal convoluted tubules Pizzini believes to be highly developed and of a true gland-like character. He thinks, however, that the tubules are concerned principally with the excretion of solids (mainly urates, uric acid and other purin bodies), and very slightly, if at all, with the excretion of water and fluids. This conclusion is based principally on the extreme granular appearance of the epithelial cells in stained (fuchsin and methyl-green) preparations and on the fact that many of these granules in the cell give a black silver-urate reaction. Pizzini contradicts the work of Tribondeau, when he declares that not all of the numerous granules which appear in the epithelial cells of the convoluted tubules represent uric acid and uric acid compounds, since only a part of them are dissolved by strong uric acid solvents. The remainder of the granules, he believes, represent directly a special secretion whose chemical nature is still unknown. Having satisfied himself that the numerous granules (which are greatly increased by diuretics, such, for example, as sodium chlorid solution, caffein, pilocarpin and by unilateral nephrectomy) do represent a selective secretion of the renal epithelium, he asserts on microscopic evidence that these granules pass out of the cell into the lumen of the tubule unchanged, in most cases. There is also a change in the size of the epithelial cell in diuresis. This is most especially marked in diuresis from strong salt solution (also from caffein) in which the cells of the convoluted tubules are so swollen that the lumen of the tubule is so constricted as to be all but entirely closed. In diuresis from uric acid and the above two agents (which is most marked of all) the granules after the indicated augmentation soon disappear, the size of the cell rapidly decreases to normal, when the brush-like border of the cell again becomes visible. After unilateral nephrectomy there is a corresponding hypertrophy in the other kidney, which is a hypertrophy not in number but in size of the epithelial cells and their finer structure. The administration of blood serum from a uremic animal, of extracts of kidney cortex and of pilocarpin (a secretion stimulant for all glands), while producing a diuresis, seems to show somewhat of a toxic effect on the structure of the renal epithelium. Atropin exerts a decided hindering effect on the secretion of solids in the urine. The renal epithelium appears much shrunken and compact.

Ovarian Transplantation.—F. H. A. Marshall and W. A. Jolly (*Quarterly Journal of Experimental Physiology*, 1908, I, No. 2), removed the ovaries from the normal position in rats and monkeys, and grafted them on the peritoneum or into the kidney of the same animal (homoplastic transplantation) or of another animal of the same species, often of the same litter (heteroplastic transplantation). If was found in all cases that transplantation was more often successful in the kidney than on the peritoneum, probably on account of the greater vascularity of the former. Homoplastic transplantation is much easier to perform successfully than heteroplastic. Transplantation of the ovaries of a young rat into the right kidney of a young male rat was not successful. The graft degenerated and was perceptibly absorbed. When the animals are near relatives, and especially when of the same litter, heteroplastic transplantation is more easily performed successfully. "The presence of an animal's own ovaries does not seem to exert any inhibitory influence on the successful attachment and growth of additional ovaries obtained from another individual. The presence of a successfully grafted ovary in an abnormal position in the body, whether obtained from the same or from another individual, is sufficient to arrest the degenerative changes which habitually take place in the uterus after the complete extirpation of the ovaries, as other experiments have shown. It may be concluded, therefore, that the ovarian influence on the uterus is chemical rather than nervous in nature." When the transplantation was successful, whether heteroplastic or homoplastic, microscopic examination showed the transplanted ovarian tissue to be of a practically normal appearance. Well-marked corpora lutea, Graafian follicles, ovarian stroma and even ova in various stages of development, were to be seen as though in a normal ovary in the normal position.

Trichinosis from Boiled Ham.—An epidemic of 14 cases of trichinosis occurring at Grinnell, Iowa, is reported by H. Albert and H. W. Norris (*Bulletin of the State University of Iowa*). The trichinosis was caused by the eating of boiled ham. Dr. Albert and Professor Norris are unable to find any record of other cases from the same cause. It is impossible to state the temperature reached in boiling the ham which caused this epidemic, but it was probably from 200 to 212 F. The heat necessary to destroy the parasite will vary, largely in accordance with the fibrous or calcareous character of the encysting envelope. In one of the cases here reported the eosinophilia reached 72 per cent., which Dr. Albert and Professor Norris state as the highest known to them. Eosinophilia is an almost constant symptom of trichinosis and in no other disease does it reach so high a figure. It is at its highest during the stage of acute muscular symptoms, ordinarily the second or third week after infection. The following conclusions, among others, are given: A temperature of 170 to 200 F. maintained from one to six or more hours, depending on the size of the ham, no doubt destroys the trichinæ in the vast majority of cases. Investigations should be made to determine exactly what temperature is needed and how long it should be maintained to kill the trichinæ. Every means should be adopted to prevent infection of hogs by removing, if possible, the possibility of their eating dead rats. All pork consumed in any other form than that of boiled ham should have all parts raised to the boiling point.

Postoperative Parotitis.—J. A. Presno reports in the *Revista de Medicina y Cirurgia*, September 25, two cases of parotitis in young men after a laparotomy for a stab wound or appendicitis. He is convinced that mechanical factors are mainly involved in these postoperative inflammations. The loss of water from the purging and the blood lost during the operation, the starvation diet at first, and the effects of the chloroform and absence of mastication—all these contribute to render the mouth dry and reduce the secretion of saliva. The practical deduction from his experience is the necessity for antisepsis and care of the mouth, and saline infusion, with the use of chewing gum if there is nothing else to chew on.

Marriages

JAMES M. RABY, M.D., Windsor, Va., to Miss Elmira May Watkins, at Windsor, November 3.

WILBUR PLEDGE STUBBS, M.D., Baltimore, to Miss E. Louise Marshall, at Baltimore, November 5.

ARCHIE SIEGFRIED VON SONNEBERG, M.D., to Miss A. Ruth Cohan, both of Boston, Mass., recently.

ALEXANDER BARCLAY, M.D., Cloquet, Minn., to Miss Agnes May Gedney of St. Paul, November 6.

HARRISON C. BLANKMEYER, M.D., to Miss Helen Van Cleave, both of Springfield, Ill., November 19.

J. ELLIS MUSSELMAN, M.D., Fairfield, Pa., to Miss Ruth Hoke, at Emmitsburg, Md., November 4.

WILLIAM D. WHITTEN, M.D., Baltic, Mich., to Miss Gertrude Connor, at Chicago, November 3.

JESSE PEIGHTAL SUDENBURG, M.D., to Miss Marcella Louise Dalton, both of Altoona, Pa., October 15.

JOHN J. MCINTOSH, M.D., Allendale, Ill., to Miss Hester Isabel Holsen, at Robinson, Ill., October 3.

WALTER LEON KNIGHT, M.D., Wewoka, Okla., to Miss Rose Byron Humphrey of St. Louis, November 11.

JOHN LEE RILEY, M.D., Snow Hill, Md., to Miss Beulah Payne Vincent, at Snow Hill, November 11.

GEORGE CLUTE REID, M.D., Rome, N. Y., to Miss Kate Theodate Newell, of Rochester, Minn., October 28.

JOSEPH AMBROSIA JERGER, M.D., Waterloo, Iowa, to GRACE FRITH-HAGANS, M.D., of Chicago, November 17.

THOMAS DUNDON COLLINS, M.D., to Miss Honora Helena Driscoll, both of Ballston Spa, N. Y., November 4.

H. H. HOWLETT, M.D., Washington, D. C., to Miss Lina Charleton Walker, at Richmond, Va., November 6.

JOHN SEDGWICK ANDREWS, M.D., Orange, Va., to Miss Margaret Janvier Cooper, of New Castle, Del., October 28.

WILLIAM MEREDITH SMITH, M.D., Frederick, Md., to Miss Theresa Jamison Fitzsimmons, at Frederick, November 4.

CHARLES WALTER DELANEY, M.D., Altoona, Pa., to Miss Elda O. Teeter of Waterside, Pa., at New York City, November 5.

JESSE STRAUSS HEIMAN, M.D., Syracuse, N. Y., to Miss Louise Rachael Henry of Winchester, Va., at Baltimore, November 4.

WILLIAM MINOR BRYAN, M.D., P. H. and M.-H. Service, New Orleans Quarantine, to Miss Henrietta Kemp White, of Locust Grove, Charlottesville, Va., November 4.

Deaths

Walter Robarts Gillette, M.D. College of Physicians and Surgeons, New York, 1863; a member of the Medical Society of the State of New York and New York Academy of Medicine; assistant surgeon in the Army during the Civil War, and for thirteen years thereafter surgeon to the New York postoffice; at one time consulting physician to Bellevue Hospital and St. Francis hospitals and the Manhattan State Hospital for the Insane; for thirty years an official, and for twelve years vice-president of the Mutual Life Insurance Company; died in Roosevelt Hospital, New York City, November 7, eleven days after an operation for cancer of the intestine, aged 68.

Emil G. Rehfuss, M.D. University of Pennsylvania, Philadelphia, 1884; a member of the American Medical Association; an ophthalmologist of repute; assistant to Dr. Turnbull and later chief of the eye, ear and nose clinic at the German Hospital, Philadelphia; for fifteen years attending ophthalmologist, and later consulting ophthalmologist to St. Agnes' Hospital; died in Philadelphia, October 31, from influenza, aged 47.

George W. Bowen, M.D. University of Michigan, Ann Arbor, 1860; a pioneer practitioner of the Maumee Valley; surgeon of the Fourth and Sixteenth Michigan Volunteer Infantry and the Fifth U. S. Cavalry during the Civil War; police surgeon of Toledo, physician of Lucas County, and physician to the Isolation Hospital; died at his home in Toledo, Ohio, November 1, from heart disease, aged 70.

Axel Ames, M.D. Harvard Medical School, Boston, 1871; of Chelsea, Mass.; a member of the Association of Military Surgeons of the United States; and a veteran of the Civil and Spanish-American wars; an officer in the United States service in Porto Rico and the Philippine Islands; well known as a surgeon and a sanitarian; a member of the State Legislature in 1878; died at the State Hospital, Danvers, Mass., November 12, aged 63.

Amos H. Caffee, of Carthage, Mo.; assistant surgeon of the First Arkansas Cavalry and the Fourteenth Kansas Infantry during the Civil War; and since that time a resident of Carthage; twice mayor of the city; and in 1880 treasurer of Jasper County; president of the Central National Bank and of the Carthage Stone Company; died at his home, October 23, from uremia, aged 74.

Walter J. Corcoran, M.D. College of Physicians and Surgeons, New York City, 1882; a member of the American Medical Association, Brooklyn Pathological Society, and president of the Brooklyn Gynecological Society in 1905; gynecologist to St. Mary's Hospital and St. Mary's Maternity, Brooklyn; died at his home in Brooklyn, November 5, from heart disease, aged 52.

Charles Ross Parke, M.D. University of Pennsylvania, Philadelphia, 1847; a surgeon in the Russian Army during the Crimean war; for many years a practitioner of Bloomington, Ill.; and from 1880-1903, chief of staff of St. Joseph's Hospital; one of the founders of the Illinois State Medical Society; died at the home of his daughter in Louisville, November 6, from cerebral hemorrhage, aged 85.

John R. Cook, M.D. Jefferson Medical College, Philadelphia, 1884; a member of the American Medical Association; honorary member of the Royal Gynecological Society, London; formerly president of the Cook Hospital and Training School, Fairmont, W. Va.; died at his home in Fairmont, November 9, from septicemia, due to an operation wound, aged 45.

Con W. Gatch, M.D. Cincinnati College of Medicine and Surgery, 1892; a member of the American Medical Association; secretary of the Miami Valley Medical Association; coroner of Clermont county, Ohio; health officer and for several terms mayor of Milford; surgeon to the C. M. & L. Traction Company; died at his home in Milford, November 5, aged 52.

Samuel George Renshaw, M.D. Dartmouth Medical School, Hanover, N. H., 1852; one of the best known and beloved physicians of New Orleans; a surgeon in the service of Emperor Maximilian, and later in the United States Army during and after the Civil War; died at St. Bernard Home, November 9, as the result of a fall a few weeks before, aged 79.

Philip Hamilton Sellew, M.D. Jefferson Medical College, 1890; a member of the Connecticut State Medical Society; for twelve years a practitioner of Salisbury, Conn.; for eight years a member of the local board of U. S. pension examining surgeons; died at his home in Westfield, Mass., October 31, from acute nephritis, aged 46.

George H. Bean, M.D. Physio-Medical Institute, Cincinnati, 1876; a member of the American Medical Association; a veteran of the Civil War; for 20 years a member of the Meigs County, Ohio, board of U. S. pension examiners; died at his home in Rutland, November 2, after an operation for cholelithiasis, aged 67.

Arthur G. Randolph, M.D. Rush Medical College, Chicago, 1899; a member of the Missouri State Medical Association; formerly surgeon to the Missouri Lumber and Mining Company, Grandin; and medical examiner for the C. B. & Q. Railway; died at his home in Kansas City, Mo., November 8, aged 32.

John E. Harris, M.D. Louisville Medical College, 1870; a member of the Indiana State Medical Association; and a member of the board of pension examining surgeons; for two years city editor of the Louisville *Evening Post*; died at his home in Bloomington, Ind., November 5, from nephritis, aged 61.

Charles A. Veith, M.D. University of Pennsylvania, Philadelphia, 1895; Johns Hopkins University, Baltimore, 1897; for a time deputy coroner of Schuylkill County, Pa.; formerly surgeon to the Pottsville (Pa.) Hospital; died at his home in Pottsville, from heart disease, November 5, aged 34.

Frederick H. Wells, M.D. Syracuse (N. Y.) University, 1883; a member of the American Medical Association and a specialist on diseases of the eye, ear, nose and throat, of Grand Junction, Colo.; died in St. Joseph's Hospital, Denver, November 5, from meningitis, following an infection of the face, aged 47.

William Hill Grafton, M.D. University of Maryland, Baltimore, 1849; one of the proprietors of the *West Coast Magazine*, Los Angeles; for more than forty years a practitioner of Iowa; and for two years quarantine officer at Baltimore; died at his home in Los Angeles, November 8, aged 80.

Nathaniel S. Robinson, M.D. Harvard Medical School Boston, 1852; for fifty years a practitioner of Neenah, Wis., and representative from that district in 1875; said to have been the oldest practitioner of the Fox River Valley; died at his home in Neenah, November 5, from senile debility, aged 81.

Clayton Glanville Coleman, M.D. Medical College of Virginia, Richmond, 1859; of Richmond, Va.; surgeon of the Twenty-fourth Virginia Infantry, C. S. A., during the Civil War; died in St. Vincent's Infirmary, Little Rock, Ark., October 7, from cerebral hemorrhage, aged 68.

Samuel W. Boynton, M.D. Eclectic Medical Institute, Cincinnati, 1859; University of Louisville, Ky., 1868; for many years a member of the board of U. S. pension examining surgeons in Cincinnati and Louisville; died suddenly at his home in San Antonio, Texas, October 31, aged 73.

Thomas H. Vernon, M.D. University of Edinburgh, Scotland, 1873; Royal College of Surgeons, Dublin, Ireland, 1877; for-

merly secretary of the state medical society and president of the Vernon County Medical Society; died at his home in Hillsboro, Wis., November 9, aged 55.

Francis E. Potter, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1881; Kentucky School of Medicine, Louisville, 1883; of Corning, Iowa; a member of the Iowa State Medical Society; was killed by the overturning of his automobile, near Corning, November 9, aged 52.

Samuel Smith Troy, M.D. Rush Medical College, Chicago, 1866; a veteran of the Civil War; and for more than 40 years a practitioner of Chickasaw and adjoining counties in Iowa; died at his home in Waterloo, November 8, from cerebral hemorrhage, aged 76.

Frederick Wright Simpson, M.D. Cooper Medical College, San Francisco, 1894; for several years a surgeon on transpacific steamers; and later a practitioner of Pueblo, Colo.; died at the home of his parents in St. Paul, Minn.; November 8, from tuberculosis, aged 34.

Daniel Winans Smith, M.D. New York University, New York City, 1856; a member of the American Medical Association; for more than fifty years a practitioner of Newark, N. J.; died at his home in that city, November 10, from senile debility, aged 75.

George William Tyner, M.D. University of Bishop's College, Montreal, 1902; of Kingston, Ont.; formerly of Norfolk, Va.; was killed by the overturning of an automobile while making a professional call at night at Tipton, Ont., recently, aged 31.

John A. Barksdale, M.D. Medical College of the State of South Carolina, Charleston, 1847; one of the oldest and most beloved practitioners of Laurens County, S. C.; died at his home in Laurens, November 6, from senile debility, aged 81.

William A. McCamly, M.D. Tulane University, New Orleans, 1869; a member of the American Medical Association; local surgeon for the Southern Pacific Railroad at Wharton, Texas; died in a sanitarium in San Antonio, November 2, aged 59.

Charles M. Ross, M.D. Missouri Medical College, St. Louis, 1891; of Tahlequah, Okla.; a member of the Missouri State Medical Association; was found dead November 3, near Tahlequah, from contact with a "live" electric wire, aged 40.

Joseph F. Dicus, M.D. Rush Medical College, Chicago, 1880; of Streator, Ill.; a member of the American Medical Association; died in St. Mary's Hospital, Streator, November 1, a week after an operation for appendicitis, aged 56.

Anton Coe, M.D. George Washington University, Washington, D. C., 1888; of Washington, D. C.; a member of the American Medical Association; died in the New Haven (Conn.) Hospital, from pneumonia, November 5.

John Joseph O'Neill, M.D. Syracuse (N. Y.) University, 1908; an interne in a hospital of Syracuse; died in the dispensary of the institution November 4, from accidental poisoning by cyanid of potassium, aged 23.

Charles A. Brown, M.D. Baltimore Medical College, 1895; a member of the American Medical Association; and a village trustee of Ludlow, Vt.; died suddenly at his home, November 2, from heart disease, aged 49.

William Newton Graham, M.D. Missouri Medical College, St. Louis, for a long time business manager of the Sedalia (Mo.) *Evening Sentinel*; died in Excelsior Springs, Mo., October 28, from diabetes, aged 59.

Arch R. Hagey, M.D. University of Pennsylvania, Philadelphia, 1901; of Hastings, Pa., formerly of Martinsburg; died from nephritis, October 30, in the University of Pennsylvania Hospital, Philadelphia.

Brown Colley, M.D. Jefferson Medical College, Philadelphia, 1897; a member of the American Medical Association; was found dead from heart disease in his office in Dunbar, Pa., November 1, aged 40.

Carman Champion Stokes, M.D. Cincinnati College of Medicine and Surgery, 1874; a member of the American Medical Association; died at his home in Rushsylvania, Ohio, November 9, aged 59.

Lloyd T. Macgill, Sr., M.D. Baltimore Medical College, 1851; of Frederick, Md.; died in the Frederick City Hospital, October 29, from septicemia following a surgical operation, aged 79.

George H. Graham, M.D. University of Bishop's College, Montreal, 1868; formerly of Wenatchee, Wash.; died in his apartments in Olympia, Wash., from pneumonia, October 31, aged 61.

Bennett Perry Alston, M.D. University of Maryland, Baltimore, 1868; a member of the Medical Society of the State of North Carolina; died at his home in Henderson, October 31, aged 62.

Oliver Leach Bradford, M.D. Trinity Medical College, Toronto, 1861; Homeopathic Hospital College, Cleveland, 1861; died at his home in Fitchburg, Mass., November 3, from cardiac asthma.

Richard N. Hewitt, M.D. University of Pennsylvania, Philadelphia, 1849; a member of the Medical Society of Virginia; died suddenly at his home in Evington, November 8, aged 84.

Orrel C. Curtis, M.D. Albany (N. Y.) Medical College, 1905; formerly of South Egremont, Mass.; died at the home of a relative in Bristol, Wis., recently, from tuberculosis, aged 27.

Alexander A. Hendrix, M.D. University of Tennessee, Nashville, 1878; a member of the Kentucky State Medical Association; died at his home in Crofton, Ky., November 9, aged 78.

Alfred Hadley Lindley, an eclectic practitioner of Los Angeles, formerly of Chicago; died at the Sea Side Hospital, Long Beach, Cal., October 18, from cerebral hemorrhage, aged 64.

Thomas Boyd Meacham, M.D. Medical College of the State of South Carolina, Charleston, 1861; a Confederate veteran; died at his home in Fort Mill, S. C., October 25, aged 72.

James D. F. Dudley, M.D. Medical School of Maine, Brunswick, 1873; died suddenly at a banquet in Arkansas City, Kan., November 2, from cerebral hemorrhage, aged 53.

Charles Edwin Parent, M.D. University of Bishop's College, Montreal, 1885; of San Francisco; died in the French Hospital in that city, October 29, from diabetes, aged 45.

Justin Allen, M.D. Harvard Medical School, Boston, 1856; a member of the Massachusetts Medical Society; died at his home in Pittsfield, Mass., November 6, aged 82.

Nelson B. Covert, M.D. Cleveland Homeopathic Medical College, 1862; an ophthalmologist of Geneva, N. Y.; died in Atlantic City, N. J., November 7, aged 68.

William A. J. Brown, M.D. Eclectic Medical Institute, Cincinnati, 1889; died suddenly at his home in Elkins, W. Va., November 5, from heart disease, aged 50.

John Harper, M.D. Cincinnati College of Medicine and Surgery, 1863; died at his home in Mount Vernon, Ind., October 19, from cerebral hemorrhage, aged 82.

Howard L. Power, M.D. Rush Medical College, 1888; formerly of Brower, Ore.; died in Marlin, Texas, October 23, from typhoid fever, aged 46.

Davies Coxe, M.D. University of Virginia, Charlottesville, 1884; of New York City; died in Dresden, Saxony, November 7, from diabetes, aged 47.

Edmund W. Fall, M.D. Bennett Medical College, Chicago, 1888; of Aurora, Neb.; died at Hot Springs, Ark., September 30, from nephritis, aged 58.

James T. Allen, M.D. Missouri Medical College, St. Louis, 1856; a pioneer settler of Gallatin, Mo.; died at his home in that place, November 6.

John Wellesley Sill (license, Mass., 1894) of Worcester, Mass.; died at the Worcester Home Farm October 31, from senile debility, aged 82.

Edwin Posey West, M.D. University of Georgia, Augusta, 1870; died at his home in Clarksville, Ga.; October 23, from mastoiditis, aged 71.

R. A. J. McFerrin (License, Tenn., 1889); a Confederate veteran, died at his home in Oliver Springs, Tenn., July 4, from heart disease.

Robert L. Wall, M.D. Missouri Medical College, St. Louis, 1890; of Tulsa, Okla.; formerly of Leeton, Mo.; died in Denver, October 25, from tuberculosis.

Franklin E. Butler, M.D. New Orleans School of Medicine, 1870; died suddenly at his home in Smithdale, Miss., November 1, from pneumonia, aged 59.

William H. McElroy, M.D. Bellevue Hospital Medical College, New York, 1881; of Houston, Texas; died in Chicago, November 1.

William H. Grominger, M.D. Pennsylvania Medical College, Gettysburg, 1848; died at his home in Philadelphia, May 6, aged 84.

J. P. Hill, M.D. Memphis (Tenn.) Hospital Medical College, 1901; of Poplarville, Miss.; died in Hattiesburg, Miss., October 31.

Philander P. Outland, M.D. Eclectic Medical Institute, Cincinnati, 1881; of Zanesfield, Ohio; died November 5, aged 57.

J. B. Reynolds, M.D. Atlanta (Ga.) Medical College, 1878; died at his home in Lumber City, Ga., November 4.

Society Proceedings

COMING MEETINGS.

Southern Surgical and Gynec. Assn., St. Louis, Dec. 15-17.
Western Surgical and Gynec. Assn., Minneapolis, Dec. 29-30.
American Assn. of Anatomists, Baltimore, Dec. 29-31.

THE SOUTHERN MEDICAL ASSOCIATION.

Second Annual Meeting, held at Atlanta, Ga., Nov. 10-12, 1908.

The President, Dr. B. L. Wyman, Birmingham, Ala., in the Chair.

Addresses of welcome were delivered by Hon. Hoke Smith, Governor of Georgia, and Dr. J. C. Olmstead, of Atlanta. The response was by Dr. G. C. Savage, Nashville, Tenn.

President's Address.

DR. B. L. WYMAN: This organization is no longer an experiment; I believe that it will develop into one of the strongest bodies in the country. Until recently the South has not kept pace with the East and West in medical progress. Owing to the unwieldy size of the American Medical Association, and to the fact that many Southern physicians could not attend its sessions, there has been for several years a need for an association, without legislative functions, whose aim should be the study of the disease peculiar to this section of the country. The aims of the association are the encouragement of scientific endeavor and the fostering of cordial relations between the members of the profession in this territory. I recommend that immediate steps be taken to establish a journal of the Southern Medical Association. Some of the problems that have to be dealt with in the South are: malaria, yellow fever and tuberculosis—especially among the negroes. County and state sanatoria for tuberculosis should be established. The chief menace to health in the South is the negro race, and negroes should be taught by the medical profession and the leaders of their race how to live properly, so that they will not so easily become a prey to disease. When the Panama Canal is completed the South will be open to new dangers, not only yellow fever, but cholera and bubonic plague.

Annual Oration: Limitations of Laboratory Work.

DR. H. F. HARRIS, Atlanta: The general accentuation and widespread adoption of laboratory methods as aids in the diagnosis and treatment of disease, along with the all but universal ignorance of the general practitioner concerning them, has and still leads to much unfortunate misunderstanding. The attitude of the profession toward the laboratory man is closely akin to that of the general public toward physicians. It is curious that the intelligent physician, with his eyes wide open, will repeat the error of the layman. Laboratory work is often entrusted to young and inexperienced men, and to add to the unreliability of such examinations the laboratory man is often given no information whatever concerning the patient. A great part of our work requires expert interpretation, and laboratory results, even when accurate, are but links in the chain that go to make up the proper diagnosis. As a nation we seem to lack the artistic temperament that is necessary to do really original work. Almost without exception we content ourselves with blindly accepting the results of European investigators. To remedy these evils, the laboratory man should be careful and accurate and always give the clinician his honest opinion. The clinician should remember that practically every laboratory report requires intelligent interpretation, and that he must not expect absolute results. He should never fail to send with his specimen all possible information respecting it and the patient.

Problems in Medicine Which Affect the Prosperity of the South.

DR. SEALE HARRIS, Mobile, Ala.: The physicians of the South have to deal not only with the problems which are present in other parts of the country, but because of climatic and other conditions, with diseases which are peculiar to the section and which affect Southern prosperity. The principal of these are yellow fever, malaria, uncinariasis and pellagra. The health of the negro is another important question. The future of the South depends largely on the solution of these problems. If the Southern states can be freed from these diseases, if the poor whites and negroes of the South can be made stronger physically and morally and become efficient laborers, capital and capitalists will pour into this section to develop our magnificent resources. Prove that yellow fever and malaria are forever stamped from the South, and our prosperity will amaze the world.

Tincture Veratrum Viride (Norwood).

DR. J. S. TODD, Atlanta, Ga.: This drug, at one time one of the most used, has now fallen into disfavor, especially in the North. Norwood's tincture was the only preparation used in the South, and the usual dose was one and a half minims, or three drops, generally at three-hour intervals. The doses recommended in modern books on materia medica vary from five to thirty minims. Morphin hypodermically is a perfect antidote. Veratrum viride does not cut short pneumonia, typhoid, or any other disease, but it still has its uses. It is not only a cardiac depressant, but a vasodilator. Given in the doses mentioned it does not produce any unpleasant effects, and the pulse can be kept at about 65 or 70 and soft. In the treatment of puerpural eclampsia five-minim doses may be given, hypodermatically, repeated hourly, if necessary. My principal employment of this drug now is in the treatment of certain heart diseases and all troubles in which there is increased blood pressure. It may be combined with digitalis, squills, strychnin and other drugs when indicated.

(To be continued.)

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-fourth Annual Meeting, held at Louisville, Ky., Oct. 13-15, 1908.

(Concluded from page 1725.)

Incidence and Differential Diagnosis of Gall-Bladder Disease and Gastric Ulcer.

DR. J. A. LICHTY, Pittsburg, Pa., discussed gall-bladder disease and gastric ulcer in detail and concluded his paper as follows: (1) The coincidence of independent gall-bladder trouble and gastric ulcer is rather rare; only 1 in 321 cases of my series. (2) Gastric ulcer with its complications can easily cause an interference with the function of the gall bladder and duct to such an extent as to produce definite gall-bladder pathology. (3) Gall-bladder disease with its complications may cause such a disturbance of gastric function as to simulate, if not actually cause, gastric ulcer. (4) While a combination of these two lesions may produce a complexity of symptoms, which makes a definite diagnosis impossible, the indications for operative interference are usually so definite that to disregard them would be disastrous to the patient.

Syphilitic Crises Simulating Surgical Emergencies.

DR. M. A. AUSTIN, Anderson, Ind.: The external evidence of syphilis most frequently resembles the slowly growing tumors, especially of bone, but these should give little trouble in their diagnosis. The abdominal crises may simulate a number of organic diseases. In three of my cases, one simulated gallstones, another renal colic and a third obstruction of the bowel. The various manifestations of syphilitic disease of the spinal cord are frequently overlooked. Syphilis is not a rare disease in any community; 80 per cent. of the cases are said to result from innocent infection.

Differentiation of Oft-Recurring Gastric Pains from Gallstone and Other Visceral Pains.

DR. N. ROSEWATER, Cleveland, Ohio: Nearly all pains of the digestive organs occur during functional activity, while those due to gallstones, visceral and other causes are independent of the digestive periods. By giving nutritive enemata for periods of one, two or more weeks, we can put the digestive functions of the stomach and duodenum at rest for so long a period that such pains as would occur during this resting period can scarcely be attributed to gastroduodenal function, but rather to independent causes. In this way we eliminate from consideration the digestive function entirely by this gastric rest test.

Systemic Effects of Chronic Infections of the Throat and Nose.

DR. F. G. STUBBS, Chicago: In view of the fact that so many systemic diseases are infectious in origin, the atrium of infection assumes a large place in the prophylactic and hygienic treatment. The nose and throat from their anatomic location at the beginning of the alimentary and respiratory tracts, and because of diverticula, such as the sinuses and tonsillar crypts, offer a large field for local and general infection. In the nose infection is due less to the direct absorption of bacteria and toxins than to the fact that the discharges carry these into the respiratory and alimentary tracts. Pure cultures of pneumococci, streptococci and meningococci have been obtained in suppurative sinus discharges. Diseased tonsils and adenoids are responsible for a large percentage of systemic effects, particularly tuberculosis and acute articular rheumatism.

Autogenous Bacterial Vaccines.

DR. OSCAR BERGHAUSEN, Cincinnati: Bacterial injections are of distinct therapeutic value. In most cases the improvement is a gradual one, although marked at the start. As in all branches of therapeutics, negative as well as positive results will be obtained. He who wishes results must follow the methods of Wright, including a careful bacteriologic analysis in each case, the preparation of an autogenous vaccine in most cases, and a careful consideration of the clinical symptoms. The opsonic index, although it may only register one phase of immunity, can be of distinct value, especially in mixed infections.

Differential Diagnosis of Mediastinal Sarcoma.

DR. R. H. BABCOCK, Chicago: This case is reported not because of the difficulty attending its diagnosis, but because it was mistaken for either pulmonary tuberculosis or pulmonary syphilis. The patient was a young man of 27, who when seen was suffering from orthopnea, anasarca, and slight cough, with scanty mucous sputum. Chancre had been contracted three years before and mercury had been used in such doses that its physiologic effects were produced nine months prior to my visit. These symptoms had been mistaken for the secondary manifestations of lues, and they, together with the discovery by *x*-ray of a shadow at the right of the sternum, had seemed to confirm the supposition that the pressure symptoms subsequently developed were due to gumma in the right lung. Physical examination, however, revealed unmistakable signs of intrathoracic pressure with displacement of the heart, right-sided hydrothorax and anasarca. Enlarged cervical and axillary lymph nodes were also detected. The subjective and objective symptoms were so plainly unlike those of consumption of the lung or of gumma of that organ that I had no hesitation in diagnosing a tumor, probably sarcoma, of the mediastinum. A subsequent postmortem established the correctness of the *intra vitam* diagnosis.

Hysterical and Neurasthenic Conditions Following Accidents.

DR. B. F. TURNER, Memphis: A plaintiff in an action for damages following an accident need not necessarily be considered as perpetrating a fraud because physical disability can not be proven. To assume the grave responsibility of expert witness demands extraordinary skill, knowledge and experience, as well as a finely adjusted judicial temperament. It is no part of the office of the medical expert witness to support either side of the case. Rather than to run the risk of appearing ridiculous in the eyes of his fellow practitioners, the conscientious physician will decline an attractive fee and refuse to appear in a rôle for which his daily walk and well-established reputation appears to fit him but poorly.

Surgery of Venereal Stricture of the Rectum.

DR. GEORGE B. EVANS, Dayton, Ohio: Venereal disease of the rectum constitutes an affection which has been mastered by neither the syphilographer nor the proctologist. The former is not familiar with the armamentarium for rectal exploration, and the latter is not thoroughly familiar with venereal diseases. The manifestations of syphilis escape the former because they are often removed from the field of vision; while the attention of the latter is called to the fact because pain exists in the rectum. Two propositions confront us: First, is this form of stricture of the rectum a local manifestation, or is it due to primary sore? Second, is it the result of secondary or tertiary syphilis, or rather a constitutional infection followed by chronic inflammation and infiltration? According to an able author, it is due to the rectum becoming inoculated through the secretions from the sores on the vulva, thus giving rise to chancroidal ulcers; these ulcers become cicatrized and constriction takes place. Again, the presence of chancroids at the orifice of the vagina, or about the anus gives rise to an inflammation of the areolar tissue surrounding the lower portion of the gut, and by the effusion of inflammatory material at certain points, giving rise to constriction either in this way alone or by directly producing inflammation and ulceration of the mucus coat of the bowel. I have seen many cases of chancroid of the vulva extending down and involving the anus, which were filthy in the extreme, but stricture of the rectum did not exist. If chancroidal virus were carried into the rectum, every prostitute would have stricture of the rectum. I believe that secondary induration of the rectum following a chancroid of the anus can occur. This induration may be followed by a chronic inflammation and ulceration and develop cicatricial tissue, thus forming an extensive stricture from which double infection may occur. Again, this stricture may be the result of true tertiary inflammation or ulceration, the rectal wall being infiltrated with syphilitic neoplasms, or by becoming organized into constrictive tissue, producing a stricture. The true explanation of the preponderance of stricture in women, whether specific or otherwise, is to be sought for rather in the anatomic relations of the rectum than in any constitutional diathesis. The site of the stricture is generally at or about the attachment of the fibers of the levator ani. This possibly plays an important causative factor indirectly, there being more or less constriction here, consequently if there is any ulceration the power of resistance in the patient is not sufficient to overcome the trauma. Here it is that the feces meet the first resistance, and where these strictures undergo contraction, and chronic inflammation follows. While iodids are usually prescribed in these conditions, they are not of curative value, and it is only by incision and eternal mechanical dilatation that these strictures of specific nature can be made tolerable.

DISCUSSION.

DR. ARTHUR DEAN BEVAN, Chicago: Almost all cases of benign stricture of the rectum are due to gonorrheal inflammation, and not to syphilis. I have had the opportunity of following the development of stricture of the rectum from a gonorrheal inflammation in two instances of gonorrheal proctitis in females. The inflammation involved the urethra and vagina, later the rectum, and within a short time a distinct stricture of the rectum formed. Gonorrhea occurs in the female twenty times as often as it does in the male child, because the female child is peculiarly susceptible anatomically and because of the ease with which infection of the vagina occurs in the female, and the difficulties with which it can inoculate a small urethra in the male child.

DR. J. R. PENNINGTON, Chicago: I have had a number of cases of gonorrhea of the rectum, and while the gonococcus was demonstrated to be present, as yet I have not seen a closed stricture of the rectum following. There has been much thickening of the rectal walls in some of them, but not sufficient to dignify it by the name of a stricture of large caliber.

X-Ray Diagnosis of Stricture of the Esophagus.

DR. SIDNEY LANGE, Cincinnati: The fact that organic and spasmodic strictures may have points in common and may be combined, and the fact that in neurotics, in valvular heart disease, and in mediastinal tumor cases the passage of the stomach tubes and bougies is distinctly dangerous, establishes the value of the *x*-ray method. It consists in giving a small bismuth capsule, a large bismuth capsule, and then several swallows of bismuth mush. From a study of the act of deglutition itself any obstruction to the passage is at once evident; the size and extent of the obstruction, and whether

organic or spasmodic can be determined. Weak or deficient peristalsis is registered by the stoppage of the bismuth capsule, and thus an early diagnosis is possible before the stomach tube meets with resistance and even before dysphagia is present. Increased mediastinal pressure can thus be recognized early by the stoppage of the bismuth capsule in the esophagus. There exists a sphincter at the entrance of the esophagus, as well as at the cardia. Instrumentation often serves to increase the spasm of these sphincters. The non-irritating bismuth mush will relax it.

Legal Responsibility.

DR. A. E. STERNE, Indianapolis: There should be more careful examination and observation of persons accused of criminal acts and for whom the plea of insanity is advanced. In my opinion, insanity once established is a clear basis for irresponsibility in a legal sense, but at the same time I emphasize the necessity for not permitting criminals who have been declared to be of unsound mind to be set at liberty. I deny the psychiatric entity of so-called moral insanity in the so-called temporary emotional state, and I would deny them altogether the protection of law and medicine. At the same time morbid tendencies and perversions associated with other evidences of mental unsoundness clearly establish insanity and are symptoms of well-defined psychoses. The existence of a mere delusion unaccompanied by other signs of mental impairment do not establish insanity; but, on the other hand, the existence of a delusion even of a single variety associated with definite signs of mental and physical defect is a sufficient basis for such a plea.

The Human Element in Medicine.

DR. P. ZENNER, Cincinnati, Ohio: As practitioners, we are too prone to overlook the human element in disease. We not only overlook the characteristics of the patient, his special physiologic or pathologic reactions, but we are apt to forget that great factor in health and disease, his mental attitudes and aptitudes. A powerful therapeutic agency is the mode of examination of the patient. The physician may harm his patient by neglect or delay in telling him the result of the examination of the urine, for instance, the idea arising in the patient's mind that he has serious disease, of which his physician is unwilling to speak. The human element figures materially in diagnosis and prognosis. The mental element frequently plays a large or controlling part in the case. Let each of us ask himself: What of present suffering is due to the mode of examination, the diagnosis or prognosis given, or the treatment instituted, and how much can be gained by remedying any harm thus done, or by well-directed suggestions, or by a heart to heart talk with the patient as to what his mind has done, and may do, in the way of mental and physical health?

Object Lessons in Otology for the General Practitioner.

DRS. J. A. STUCKY and S. B. MARKS, Lexington, Ky.: We have endeavored to impress the general practitioner with the necessity of a careful and routine examination of the ears of children in all febrile conditions, especially in the acute exanthemata. To accomplish this the medical schools of our country must offer a better course of instruction in the diseases of the throat and ear. We advise that a free myringotomy be done in cases of earache after pain has persisted for a few hours, with no relief from local and general measures, whether there be fluid in the middle ear or changes in the drum membrane, as it relieves the pain and renders further trouble much less likely. A search must then be made for the cause of the trouble. The value of microscopic examination of every aural discharge can not be over-estimated, since the various organisms causing middle-ear suppuration and consequent mastoiditis differ in virulence. The differential leucocyte count is also of value. Every patient with mastoid tenderness should be carefully watched; the disappearance of pain and restlessness means the same thing in mastoiditis as in appendicitis—a relief of local pressure, the pus escaping externally or internally. The so-called classical symptoms should not be waited for in mastoid disease, but early operation done, thereby conserving the patient, as less anesthesia is required, there is less shock, the middle ear is frequently saved, and complications are avoided. Chronic conditions of the middle ear should always be considered dangerous and should receive careful attention and operative treatment if necrosis be present. The treatment of the constitutional phase of every ear case, no matter how mild, is important in regard to the intestinal tract.

Other Papers Read.

The following papers were also read:

"Administration of Ether by Rectum," by Dr. F. Besley, Chicago; "Résumé of the Various Technics for Dislocated Kidney and Application of Each," by Dr. E. Harlan, Cincinnati; "Obstruction of the Bowel," by Dr. C. T. Souther, Cincinnati; "Value of Enterostomy in Intestinal Obstruction," by Dr. E. M. Gilliam, Columbus, Ohio; "Internal Urethrotomy: Indications and Treatment," by Drs. F. C. Valentine and T. M. Townsend, New York; "Precancerous Influence of Gastric Ulcer," by Dr. W. D. Haines, Cincinnati; "When Should the Prostate Be Removed," by Dr. E. O. Smith, Cincinnati; "Fracture of the Astragalus with Dislocation of the Fragments," by J. H. Stealy, Freeport, Ill.; "Cause of Failure in Treatment of Tuberculosis," by Dr. F. M. Pottenger, Monrovia, Cal.; "Multiple Serositis," by Dr. W. L. Bierring, Iowa City; "Expert Testimony and the Medical Witness," by Dr. L. M. Crafts, Minneapolis; "Cerebral Rheumatism," by Dr. H. H. Hoppe, Cincinnati; "Mental Responsibility," by Dr. C. W. Hitchcock, Detroit; "A New Field for Practice in Spirit and Drug Neuroses," by T. D. Crothers, Hartford, Conn.; "Feeding and the Use of Alcohol in Typhoid Fever," by Dr. J. H. Landis, Cincinnati; "Hyperchlorhydria and Its Treatment Based on Animal Experimentation," by Dr. M. M. Portis, Chicago; "Pernicious Anemia," by Dr. J. A. Witherspoon, Nashville, Tenn.; "Causation and Treatment of Infantile Convulsions," by Dr. E. W. Saunders, St. Louis; "The Liver in Five Hundred Cases of Gastro-intestinal Diseases," by Dr. M. H. Mack, Chicago; "Nervous Children," by Dr. I. A. Abt, Chicago; "Factors in the Production of Pulmonary Edema," by Dr. J. L. Miller, Chicago; "Treatment of Sciatica by Deep Perineurial Infiltrating Injections of Salt Solution," by Dr. D'O. Hecht, Chicago; "Case of Pulmonary Tuberculosis," by Dr. S. G. Bonney, Denver; "Relapses After Apparent Cure in Pulmonary Tuberculosis," by Dr. C. L. Minor, Asheville, N. C.; "Early Treatment of Squint," by Dr. G. F. Suker, Chicago; "Clinical Facts Speaking for the Identity of the Pneumococcus and Meningococcus," by Dr. R. B. Preble, Chicago; "Improved Methods for Preparation of Glycerin Jelly for Macroscopic Specimens," by Dr. C. I. Hogue, Milwaukee, Wis.

MEDICAL SOCIETY OF VIRGINIA.

Thirty-ninth Annual Meeting, held in Richmond, Oct. 20-23, 1908.

(Concluded from page 1724.)

Cesarean Section.

DR. LEWIS C. MORRIS, Birmingham, Ala.: In infected cases the incision is closed as usual by continuous through and through sutures of catgut into the uterine wall, except for a distance of three centimeters at the lower angle. A Mikulicz wick is introduced through the abdominal wall into the uterine cavity. It is important to minimize the loss of blood, and this is best accomplished by an assistant compressing the uterine artery, or by encircling the cervix with a soft rubber catheter before the uterine incision is made. In predetermined, elective Cesarean sections it is never necessary to remove the uterus except where there is uncontrollable hemorrhage from the placental site, or where there is carcinoma of the cervix or a myxomatous tumor which can not be enucleated. Where there is exhaustion and infection, or probable infection, the uterus should be removed or treated by drainage through the abdominal wall.

If it is desired to prevent future conception tie off the tubes at the outer ends. Where a diagnosis of positive indication for Cesarean section is made before the onset of labor, I am convinced it is safest and best to carefully compute the termination of gestation, and upon its arrival operate regardless of labor. I am also convinced that the diagnosis of the conditions necessitating Cesarean section can most frequently be made before the onset of labor. If this is done the operation becomes one of election and, in the hands of the expert and done under proper conditions, maternal and infantile mortality should be almost nothing or no greater than in clean, interval appendectomies.

DISCUSSION.

DR. E. MCGUIRE, Richmond: In a case of puerperal eclampsia with undilatable cervix I performed a vaginal Cesarean section which was attended with practically no loss of blood, and recovery was uneventful. The operation is one of the most important for cases of this kind, being quick, easy and safe. In a case in which the child had been dead for five days, and the woman septic, I did a Porro, but death ensued. In a

Porro operation performed on a woman whose uterus ruptured while she was on her way to the hospital, there was but little bleeding and no shock, and the patient was well in three weeks. I agree with Dr. Morris as to the safety of the Cesarean section, unless the child is dead. I do not, however, see the value of draining through the abdominal wall, because if there is infection, the germs have penetrated the tissues and are beyond the reach of the drain; and if flushing is necessary it is best done through the vagina. To sum up, in aseptic cases, Cesarean operation is best; but in the septic do the Porro.

DR. G. T. HARRISON, New York: I agree with Dr. Morris' conclusions, but do not think that the classic operation is indicated in cases of placenta prævia or undilatable os. In these, vaginal Cesarean section is superior to the Saenger. The transverse incision through the fundus is not so apt to be followed by hemorrhage.

DR. J. W. BOVÉE, Washington: Sterilization should only be done when life will be endangered by future pregnancies. The method of sterilization by ligating the tubes is uncertain. One should be certain that there are no supernumerary tubes and that the ligatures do not cut through them. It is necessary, too, to cover the cut ends with peritoneum to insure closure. Drainage of the uterus is best done by taking advantage of pendency, and, therefore, through the vagina with a stiff tube of considerable caliber. As to vaginal Cesarean section in the puerperal woman near full term, the vaginal wall is prepared by Nature for the passage of the fetus, and therefore, it is well dilated; but the operation adds traumatism, and in the closure of the wounds in emergency work one is very apt to make indiscriminate approximation of the structures resulting in a relaxed perineum.

DR. L. C. MORRIS, Birmingham, Ala.: There is practically no mortality rate in Cesarean sections performed in aseptic cases. There are certain patients who die in spite of any procedure, but these are rare, and in the majority of cases drainage through the abdominal wall is best. I agree with Dr. Bovée as to the necessity for covering the cut end of the tube, but in these cases rapidity is a desideratum, and section between ligatures is reasonably safe. As to hemorrhage, the method described is very quick and absolute.

Sacral Hematoma.

DR. E. T. BRADY, Abingdon, reported a case of spina bifida converted into a hematoma during breech presentation, the breech presenting. It was supposed to be the bag of waters and an attempt was made to rupture it, but, fortunately, unsuccessfully. The tumor weighed 9 ounces, the baby 4½ pounds. The former was removed three weeks after birth and the latter is living.

New Treatment in Hypertrophied Prostate.

DR. J. W. HUNTER, Norfolk, discussed the Roentgen ray treatment for this condition and reported an apparently hopeless case in a man aged 81 who had been greatly improved and symptomatically cured. He thinks that the full physiologic dosage should be given. The patient is placed in Sim's position, and the perineum irradiated. He believes that the new treatment will be followed by brilliant results, though he considers it better suited to cases of the first or second degree of prostatic hypertrophy. It is without mortality and, in careful hands, free of danger.

DISCUSSION.

DR. A. L. GRAY, Richmond: We can not hope for much in *x*-ray treatment of hypertrophied prostate, because the increase of connective tissue overbalances that of the cells. If the reverse were true, then the rays would be of benefit. We should not consider a post hoc cure as a propter hoc. While it appears that Dr. Hunter's claim of a cure is good, we should wait for others before deciding the case affirmatively.

DR. S. G. SLAUGHTER, Lynchburg: Surgery of the prostate is, as a whole, disappointing; manual massage is disappointing. The static wave has, in my hands, produced symptomatic cures.

DR. J. W. HUNTER, Norfolk: I do not claim to cure every case of hypertrophied prostate or even a small percentage of them; I only give the result in my case in which surgery was contraindicated and medicines proved unavailing. With the rays there was a symptomatic cure. As to surgery of the gland, while in some hands it is successful, it is curious that so many patients have died one or two months after operation. There has been no mortality from the rays.

Two Cases of Mechanical Obstruction of the Bowel.

DR. J. SHELTON HORSLEY, Richmond: In one case there was a band which crossed the ileum about six inches from its termination. An artificial anus was made and two weeks later it together with several inches of intestine on each side of it, was excised and union made with sutures. Recovery was complete. In the second case there was volvulus of the sigmoid which had caused gangrene of all the sigmoid, the upper part of the rectum and most of the descending colon. Operation was performed under cocain, and the gangrenous bowel being excised, the colon was brought down where it was healthy and sewed in the upper corner of the wound. There was not a sufficient amount of healthy rectum left to do an anastomosis. The patient made a satisfactory recovery and left the hospital at the end of four weeks.

Some Further Applications of the Fowler-Murphy Method.

DR. SOUTHGATE LEIGH, Norfolk: I wish to emphasize the good results obtained from elevation of the patient while on the right side instead of on the back after operation for appendicitis. This position is almost as important as the elevation, and I have yet to see a case in which it did not aid drainage. Elevation is as applicable in operative work above the pelvis as in others. In septic cases the position is to be aided by salt solution in the bowels and by other measures as indicated. It should be especially appreciated by the country physician when immediate operation for appendicitis is impossible, as because of it infection is kept from spreading. It should be maintained in the transportation of patients to hospitals.

The Economics of Appendicitis.

DR. W. L. PEPLE, Richmond: Appendicitis is to be considered from the standpoint of the patient, and such methods of treatment undertaken as will tend to lessen the stay in bed and minimize the chances of hernia, fistula, obstruction, etc. Second only to the saving of life is the big economic question of cost in time and money to the patient. To drain the abdomen of a working man is usually to drain the resources of his entire family. By a proper choice of incision in certain cases, the stay in bed may be cut down by weeks, and a hernia requiring another operation averted. We can not settle the question of drainage by failing to drain cases that demand it. In a large majority of drainage cases we expect recovery; the lay issue of saving life is not paramount, and we should, in these cases, do as little damage to the abdominal wall as possible and leave its cut or separated parts in such relation to one another that a good functional result may be confidently looked for.

Other Papers Read.

The following papers were also read: "Remarks on Direct Inspection of the Windpipe," Dr. J. A. White, Richmond; "X-Rays as a Treatment of Skin Diseases," Dr. T. W. Murrell, Richmond; "Herpes Gestationis," Dr. C. J. Andrews, Norfolk; "Diagnosis of Hysteria," Dr. B. R. Tucker, Richmond; "Case of Tetanus," Dr. H. C. Grant, Waynesboro; "The Medical Profession as Represented in the United States Navy," Dr. P. M. Rixey, Surgeon-General, U. S. N.; "Typhoid Bacilli Carriers," Dr. St. G. T. Grinnan, Richmond; "Some Phases of Tuberculosis Important to the Public," Dr. C. T. St. Clair, Tazewell; "Present-Day View of Arteriosclerosis," Dr. A. G. Brown, Richmond; "Hydrotherapy," Dr. J. C. Walton, Richmond; "Interdependence of Physicians and Surgeons," Dr. J. A. Hodges, Richmond; "Some Remarks on Coroners and Their Duties," Dr. J. W. Brodnax, Manchester; "Extensive Lacerations of the Cervix Uteri Involving the Parametrium—Their Significance and Treatment," Dr. G. T. Harrison, New York, N. Y.; "Treatment of Cancer," Dr. H. B. Stone, University of Virginia; "Carcinoma of the Breast," Dr. H. M. Taylor; "Stitching in Trachelorrhaphy," Dr. J. W. Henson, Richmond.

IDAHO STATE MEDICAL ASSOCIATION.

Sixteenth Annual Meeting, held at Boise, Oct. 8-9, 1908.

(Continued from page 1636.)

SYMPOSIUM ON ROCKY MOUNTAIN SPOTTED (TICK) FEVER.

Clinical Phases of Rocky Mountain Tick Fever.

DRS. J. L. STEWART and W. F. SMITH, of Boise, presented this paper, read by Dr. Smith. They stated in brief: Dr. E. E. Maxey, Boise, was the first to describe the symptoms of this disease. It usually begins with malaise, chilly sensations, occasionally a distinct chill, and general stiffness and soreness all over the body, especially in the back and legs. Occasionally there is headache and nosebleed. The tongue is coated with white fur, later becoming brown; it is dry, cracked in the middle, and has moist edges. Constipation is usually obstinate. The fever is of a continuous type, ranging from 100 to 104 or 105 F. The eruption appears in from three to five days, usually first on the back, ankles and wrists, spreading gradually to limbs and body, and to the palms of the hands and soles of the feet. Late in the disease the eruption may be seen in the mouth and throat. The rash at first consists of red maculæ, gradually becoming darker to brownish, then hemorrhagic, which appear in successive crops and coalesce and become blotchy, often forming large hemorrhagic areas. Delirium is frequent, the spleen is enlarged, bronchitis is frequent, with tendency to pneumonia in alcoholics, and in severe cases there is apt to be a semicomatose condition. Pulse is slow and full; urine is scant, high colored, occasionally hematuria, rarely albuminuria. Blood examination shows débris of broken down red blood corpuscles and iron pigment, slight leucocytosis; hemoglobin is reduced sometimes as much as 50 per cent. Complications noted are: Sloughing of scrotum, palate and pharyngeal mucous membrane, bronchitis, intense intoxication, cardiac dilatation, acute mania, and in later stages in aged patients there may be cyanosis. The period of incubation varies from five to seven days. The mortality is probably from 5 to 10 per cent.

Causal Factors, Mortality and Geographical Distribution in Idaho.

DR. E. E. MAXEY, Boise: From information received from ninety-five physicians of the state, from the state immigration commissioner, the state auditor's office, the state live stock commission, and other reliable sources, the following statistical information is compiled:

1. There are approximately 375 cases of spotted fever in Idaho yearly.
2. Ticks are reported found in every county except Latah. The ordinary wood tick seems to be the prevailing species.
3. Rabbits, gophers, coyotes, ground squirrels, badgers, and chipmunks are found in abundance over the entire spotted fever area.
4. Horses and cattle are found in large numbers in all counties.
5. Practically all sheep are fed, sheared, lambed, and grazed only in the fifteen lower counties.
6. At least 38 per cent., probably more, of cases occur among sheep herders or those handling sheep; 35 per cent. occur among those leading an outdoor life; 8 per cent. were miners or prospectors; 6 per cent. stockmen; 5 per cent. farmers.
7. All ages and both sexes are attacked, if exposed to infection.
8. History of tick bite has been found in 81.5 per cent. of the Idaho cases in which observation was made.
9. Seventy-one per cent. of the physicians who have treated spotted fever accept the tick-bite theory as method of infection; 29 per cent. had no theory or thought it due to contaminated water.
10. A majority of the cases occur in April and May.
11. The chief complications are meningeal irritation, pneumonia, nephritis, cardiac weakness, and gangrene of skin.
12. Death rate varies from 3.8 to 11.4 per cent.; the average mortality is 4.8 per cent.
13. The principal infected areas of the state are in Washington, Canyon, Ada, Elmore, Blaine, Lincoln, Cassia, Oneida, and Bannock counties; less frequently the disease is found in Boise, Owyhee, Twin Falls, Bear Lake, Bingham, Fremont, and Custer counties, very rarely in Kootenai county.

There is marked similarity in geographical distribution of spotted fever and the areas of the state occupied by the sheep industry; and in view of our present knowledge of relation of tick to this disease, this relation may be explained by one of two conditions: (a) Either the sheep, sheep-dog, horse, jack rabbit, gopher, ground squirrel, chipmunk, coyote, or badger, any or all of them, may be subject to spotted fever in Nature, the tick becoming inoculated by feeding on the sick animal, and then carrying the infection to man; or (b) great numbers of female ticks are infected by man during the spotted fever season and, through their progeny, carry the infection over to the following spring. In either case the sheep, dogs, and horses may act only as common carriers or distributors of the infected ticks.

Recent Investigations of Rocky Mountain Spotted (Tick) Fever in Montana and Idaho.

DR. H. T. RICKETTS, Chicago: Prior to April, 1908, my investigations demonstrated (1) that the character of the disease is a generalized invasion of the body by an as yet unrecognized and uncultivated micro-organism, as evidenced by the ability to reproduce the disease in guinea-pigs or monkeys by injecting patients' blood serum or by the bite of a tick, and by maintaining the disease in these animals by methods of passage, and also that the disease is exclusively an acute infection and recovery is followed by immunity; (2) that the disease is transmitted to man by the bite of a tick, the life history of the tick and its various relations to the disease were also definitely determined; (3) from the accurate knowledge thus obtained certain preventive measures have become manifest, that is, avoiding infected localities in the spring, individual precautions if compelled to visit infected areas, and measures to decrease the number of ticks, by oiling domestic animals and clearing off sage brush and timber and destruction of rodent animals. In the spring of 1908 I examined several Idaho cases and found that the clinical features of the Idaho disease were similar to those occurring in Montana, and I succeeded in inoculating guinea-pigs from these patients. At the same time guinea-pigs immune to the Montana disease were inoculated, with negative results, thus conclusively demonstrating the identity of the disease in the two states, the Idaho strain being apparently much milder. In May, 1908, I began experiments through which I have demonstrated that what seems to be the prevailing tick near Boise and Mountain Home, is capable of acquiring and transmitting spotted fever, and that the Idaho tick can acquire and transmit the Montana spotted fever. I also tentatively demonstrated that the Montana tick may acquire and transmit the Idaho disease.

In my Montana experiments this year I demonstrated that the gopher, ground hog, chipmunk, rock squirrel, and mountain rat are susceptible to spotted fever, and further that these animals may be sick with spotted fever and yet show no clinical features of the disease as does the guinea-pig. It is yet to be demonstrated what other animals are susceptible to the disease, and what animals, if any, actually suffer from the disease in Nature. The difference in virulence of the Idaho and Montana cases may be explained either through the difference in variety of tick or a difference in the animals which act as tick hosts in the two states. This and many other important features yet remain to be worked out.

Indications for State Control of Rocky Mountain Tick Fever.

DR. T. D. TUTTLE, Billings, Mont.: The disease first appeared in Montana in the spring of 1885, since when the number of cases has gradually increased, with a death rate of from 60 to 90 per cent. The disease probably appeared in Idaho before it did in Montana and infection very likely extended from Idaho to Montana. Tick fever is also found in Washington, Oregon, Wyoming and Utah. Dr. Emil Starz of Helena made the first scientific study in 1901 by examining the soil and water of the infected region, but with negative results. In 1902 Wilson and Chowning were employed by the Montana board of health to study the disease and their findings are well known. In 1903 Anderson was able to corroborate the findings of Wilson and Chowning. In 1904 Stiles made extensive studies, but was unable to confirm findings of Wilson and Chowning and Anderson, and in 1905 Francis' studies were entirely negative. In 1906 Drs. Ricketts and King took up the work. Both succeeded in inoculating guinea-pigs and in transmitting disease from guinea-pig to guinea-pig through the bite of a tick. Neither was able to find the hematozoa described by Wilson and Chowning. The life history of the tick was studied by Ricketts, and infected ticks were found in Nature. This work of further investigation should be continued by competent

men of national reputation, and at public expense of all states infected with the disease. To fight the disease we must eliminate the tick from inhabitable districts. This is probably best done by clearing off and settling the land for agricultural purposes, and in some localities by oiling all domestic animals.

Discussion on Symposium on Tick Fever.

DR. J. R. NUMBERS, Weiser: Tick fever was first discussed by this association twelve years ago. I was firmly convinced that the tick was the principal factor in the inoculation of the disease. While Dr. Tuttle mentions the period of incubation in Montana as practically about seven days, it has been my observation in Idaho that the period of incubation is longer. Of course, most of the cases occur among people who are constantly exposed to tick bites. It is nothing unusual for some of them to have had on their person many ticks and many tick bites for weeks, and it is impossible in most of these cases to tell when the inoculation took place. But I have noticed that people who lived in town and would go out into the sage brush for a day and come home with one or two tick bites would often go for eleven or twelve days before showing evidence of disease. It is rare indeed for anyone living in town to have this disease unless they have made a recent visit to the foot-hills or sage brush plains. Twenty-one years ago Washington County was practically a cattle and horse country, for there were very few sheep in the valley. If sheep came into the county they came after the lambing and shearing periods and were driven right through up into the hills, and after a time of year when one was likely to get this fever. About three years after I went to Weiser, eighteen or nineteen years ago, the first case of spotted fever I ever heard of was reported in the Payette valley. I did not see any cases for two or three years more, but I heard of several cases over there each year, and it occurred to me that it was not a very serious disease or that they were very fortunate, as I had never heard of anyone dying at that time from it. My first patient came into the office just at the period when the eruption shows on the wrists and ankles and he had considerable fever, but his was not an aggravated case. After puzzling over it considerably and after I had told the man that I did not know what was the matter with him, it seeming to me to be more like an upside-down case of measles, an old man who happened to be in the office at the time and who had seen some of the other cases, said it was a case of spotted fever, and from that time on I knew spotted fever when I saw it. Now, about this time they were beginning to feed sheep and sheep were held around that locality in the spring until after lambing and shearing, and as soon as the sheep came we began to have spotted fever. Prior to that time, people had been going out into the sage brush and were bitten with ticks, but not until after the sheep were brought in did we have any spotted fever. The sheep herders and the people who were out in the sage brush were the first to get the disease.

For a few years after that there was spotted fever in the lower valley, but no cases in the upper valley. As those valleys were settled up and brought under cultivation, and sheep were driven up there during the lambing and shearing season, tick fever has been prevalent there; and, fortunately, there are fewer cases in the vicinity of Weiser. One or two things have occurred to me in regard to the severity of the disease. In the average person who has it, the sheep herders and young cattlemen, and young people in general, I have never noticed a fatal case, but in isolated cases, especially when old people are attacked, there is a heavy mortality. In these fatal cases the course of the disease is entirely different. The eruption shows up scarlet colored spots at first, followed by a dark mottling of the skin and a well-defined eruption, and very scanty urine. At first the patient is not very ill and the disease is usually allowed to run until by the time the physician sees the patient it is too late. There is absolute suppression of urine, a very small amount of high-colored urine being obtained by catheter; temperature is usually subnormal; and other conditions which result fatally in ten or twelve hours. In another class of fatal cases the disease attacks very stout people, and those who have a history of rheumatism. In the younger people of this class the temperature runs very high, the eruption coming out usually bright scarlet and becoming thicker and thicker until there is not the size of a pinhead that is not covered; after the fifth or sixth day delirium develops, apparently a profound toxemia and suppression of urine; and the disease is apt to prove fatal within two or three days.

DR. L. P. MCCALLA, Boise: Dr. Ricketts' work has proved conclusively that the tick is the great if not the only factor in the case, though a great deal remains to be done along that line. This brings up the question of how we are to get rid of the tick. What can we as physicians do, and what can or should we ask the coming session of the legislature to do in the way of helping to study and eradicate this disease? Of course, the disease is not so fatal in this community as it is in Montana, but if we can get help from the legislature I think we could carry this work on.

DR. J. M. TAYLOR, Boise: Dr. Maxey spoke of the disease being confined to the Snake River plains and to the Bear River valley, and I wonder if the Bear River valley in Utah is also an infected area. I have heard it suggested that the rabbit bears a probable relation to this disease, because it was a well-known fact that rabbits frequently disappear from certain localities for one, two or three years on account of some epidemic among them.

DR. E. W. KLEINMAN, Hailey: I have seen three cases of spotted fever since returning from the recent session of the American Medical Association. The first occurred July 31 on the Malad River, the second on August 15 up the canyon near Hailey, and the third case on September 10. The first two patients got along nicely and the third one is still under treatment. Five years ago when I first came to this country, I was led to believe that this disease was to be seen only during the early spring months. A boy from Shoshone, where I was then located, was taken ill, and notwithstanding the fact that the people stated it was spotted fever and the attending doctor had so diagnosed the case, I had never heard of a case later than June, and I took occasion to criticize the diagnosis, but later developments have proved that the doctor was wiser than I.

DR. E. E. MAXEY, Boise: Infected areas extend down the Bear River valley into northern Utah, and the disease is rather commonly found in parts of eastern Oregon in the sage brush country. In the upper Snake River valley, the only cases reported from Fremont County were reported by Dr. Hargis of Ashton, near the eastern part of the county. He reports seeing an average of two cases annually, one-third of his patients gave history of tick bite and all died. Of course, there is a question as to diagnosis here, but I think Dr. Hargis' cases were probably of the Montana malignant type. Dr. Price of Rigby, near the southern boundary of Fremont County, reports having seen two cases within the last four years. Fifty per cent. of his patients gave history of tick bite and none died. Dr. C. Wardell Stiles, Washington, D. C., states in a communication that he recently had occasion to study a large number of ticks from the Bitter Root valley and to compare them with specimens from California. Up to this more recent study he had not been able to determine clearly between the Montana and California species, but with his present material it seems clear that the Montana tick of the Bitter Root valley, namely, *Dermacentor andersoni*, is entirely distinct from the California tick known as *Dermacentor occidentalis*. Dr. Stiles states further that he has examined few ticks from Idaho and is not prepared to commit himself to a definite statement, but that so far as his examinations have gone he believes the Idaho species to be distinct from the *Dermacentor occidentalis* of California, and to be closely allied to and possibly identical with the Montana tick *Dermacentor andersoni*.

DR. H. T. RICKETTS: I meant to state in speaking of the virus in the salivary glands that the presence of the micro-organisms were demonstrated by means of inoculation experiments. We have never been able to see the micro-organisms. Concerning the species of ticks, not long ago some time during the summer, I sent specimens to Dr. Stiles and Dr. Banks of Washington. Dr. Stiles replied that he thought the Idaho

tick was different from the Montana tick, but would want to have more material before he could come to a definite conclusion about it. He stated again that the Montana tick is the *Dermacentor andersoni*. Dr. Banks responded, saying that the Idaho tick was certainly different from the Montana tick, so far as he could see an entirely different species. Dr. Banks recently published a new index of the ticks of the United States, in so far as they are known, and he differentiates between the Montana tick and the Idaho tick. Concerning the question of spotted fever in August, the disease does not occur in Montana after July usually, rarely in August and sometimes as late as October. The season for the adult ticks is in the spring. They are rarely found in Montana after July 1 and until February, but I have found them in Montana in September, but not many of them. The development of the tick depends on temperature and moisture; some develop more rapidly and some more slowly. In Idaho Dr. Maxey and I went out last spring during the spotted-fever season and we found some young nymphs on some of the gophers and adult male and female ticks on horses. It is certain, therefore, that some of these ticks would develop as adult ticks later in the summer. I was going to say something about the serum used in the treatment of these cases. It was taken from a horse. The infection of the horse was proved and the horse recovered, it being then bled to death in order to get as much serum as possible. The serum was given in small quantities and in large quantities, and in one case intravenous injection was resorted to. The number of cases treated in this way was too small to draw any definite conclusions. Usually the cases went through as though no serum had been given. We have no means of determining at present whether this is an antitoxin serum or not. We can not cultivate the organism, but if the serum happens to be an antitoxin serum it will probably be of great value in the treatment of spotted fever.

DR. W. F. SMITH, Boise: Dr. Maxey said that in some of the replies received by him some of the physicians adhered to the opinion that the disease was due to contaminated water. I was of that opinion until one or two things changed my mind. One patient went out to his sheep camp and I cautioned him about drinking the water out there, so he took a case of Idanha water along and drank nothing else, except of course in cooking and in tea and coffee. He had been out a great many times prior to this time, and on the other trips he had been drinking the camp water, but this time, though he drank none of the camp water, he contracted the disease. I told him if he had not drank the Idanha water he might have been all right. I also had the water examined on two occasions by a chemist in Salt Lake, and it was found to be absolutely pure and nothing was found in the water that could produce any trouble watever. The water examined was taken from the spring used by this camp. These things proved to me that the water supply had nothing to do with the disease. Another interesting case that I recall was that of a child who had not been out of town, but she had a pet lamb, and about a week after the lamb was taken to the house the child was taken down with spotted fever. The tick was found on the child and it must have been on the lamb. While most cases have occurred in April and May I have had cases in the latter part of August, several in February, and one case I went to in three feet of snow in a mountain town. I have never seen nephritis in any of the cases I have had.

DR. T. D. TUTTLE, Billings, Mont.: In regard to the sheep question, there seems to be something crooked in the condition. Either the tick is different in Montana and Idaho or the sheep are different. There are over 5,000,000 sheep in Montana, but they are all on the east side of the state, and on the west side, where we have spotted fever, sheep are rare. There is no spotted fever in the sheep district. It may be a tick here that lives on the sheep that transmits the disease. The special species of tick that live in Montana do not attach themselves to the sheep. If they did it would make the fight against the tick much harder. At present the experiment of oiling cattle would be comparatively easy to carry out. The question of getting anything from the legislature in the state should be gone into. Resolutions are good things, but they have not so much weight as a physician going to a legislator and saying what he thinks ought to be done. The family physician has great influence.

Ocular Manifestations of Some General Diseases.

DR. R. L. NOURSE, Boise: The eye, directly or indirectly, reflects or participates in a large number and variety of general or systemic diseases, particularly cerebral, cerebrospinal and constitutional affections. Among these are: The ocular manifestations of syphilis, both hereditary and acquired, through its effect on the brain and cord and the eye structures themselves; and the optic neuritis, papillitis and choked disc caused by cerebral hemorrhage, gummata, meningitis, brain abscess, hydrocephalus and brain tumors. Optic neuritis frequently follows infective diseases, and toxic amblyoplas may be due to use of tobacco and alcohol. Heart and blood diseases, such as endocarditis, endarteritis and aneurism, may cause disastrous eye lesions from embolism and thrombosis. Pernicious anemia gives a characteristic eye ground. Rheumatism ranks next to syphilis in its responsibility for eye diseases, affecting nearly all structures of the eyeball. Arteriosclerosis, pyemia, gonorrhea, tuberculosis, scrofula and eczema are likewise prone to exhibit their baneful effects on the eye structures. Exophthalmic goiter and hysteria are noted for their eye symptoms, and the effects on the eye structures of diabetes and diseases of the kidneys are important.

Other Papers Read.

"A Plea for the Heart," by Dr. Susan E. Bruce, Lewiston; "A Case of Dextrocardia," by Dr. O. H. Avey, Payette; "Medical versus Surgical Treatment of Amebic Dysentery," by Dr. John M. Holt, U. S. Public Health and Marine-Hospital Service; "Hysteria; for the General Practitioner," by Dr. R. L. Gillespie, Portland; "Medical Journals," by Dr. K. J. A. Mackenzie, Portland; "Physiologic Therapeutics or Remedies Other than Drugs," by Dr. J. E. Froom, Boise; "Medical Aspect of the Use of Alcoholic Beverages," by Dr. J. M. Taylor, Boise; "Bilateral Twin Tubal Pregnancy," by Dr. L. P. McCalla, Boise; "Restoration of the Obliterated Cul-de-Sac for the Insertion of an Artificial Eye," by Dr. A. Blitz, Boise.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Held at Washington, D. C., Sept. 28 to Oct. 3, 1908.

(*Continued from page 1726.*)

SECTION VI.—STATE AND MUNICIPAL CONTROL OF TUBERCULOSIS.

President, Surgeon-General Walter Wyman, Washington, D. C.; secretary, Dr. J. W. Kerr, Washington, D. C.

A Federal Bureau of Health.

PROF. IRVING FISHER, Yale University, president of the Committee of One Hundred on National Health:

The Committee of One Hundred on National Health was organized in the Spring of 1907. Its aim is to secure a bureau or bureaus of health under the Federal Government, as it is believed that in this way tuberculosis and other diseases can be most successfully reduced. The committee has received the cordial support of President Roosevelt, the late ex-president Cleveland, Mr. Taft, Mr. Bryan, the governors of various states and senators and congressmen. Last summer the health plank of the Committee of One Hundred was adopted in the platforms of the Republicans, Democrats and Independence League. The Republican platform reads:

> We commend the efforts designed to secure greater efficiency in national public health agencies and favor such legislation as will effect this purpose.

The Democratic platform reads:

> We advocate the organization of all existing national public health agencies into a national bureau of public health, with such power over sanitary conditions connected with factories, mines, tenements, child labor, and such other subjects as are properly within the jurisdiction of the Federal Government and do not interfere with the power of the states controlling public health agencies.

The movement has the endorsement of the American Medical Association and other medical organizations, the American Public Health Association and other hygienic organizations, the United Mine Workers of America and other labor organizations. It is closely linked with the movement toward the preservation of our natural resources. In the peroration of President Roosevelt's famous speech before the conference on the Conservation of Natural Resources, he said:

> Finally let us remember that the conservation of our natural resources, though the gravest problem of to-day, is yet but part of another and greater problem to which this nation is not yet awake, but to which it will awake in time, and with which it must hereafter grapple if it is to live—the problem of national efficiency.

There already exists at Washington a Public Health and Marine-Hospital Service, but its work is chiefly confined to quarantine, to the care of sick sailors and to the examination of antitoxin at its hygienic laboratory. There is also the Bureau of Pure Foods, presided over by Dr. Wiley, and in the Census Office there is a Division on Vital Statistics. A proposition which has found favor with many in Congress is to utilize the Department of the Interior by transferring from it most of the bureaus not connected with health or education and to transfer to it the various scattered health agencies now in other departments. To the nucleus thus formed it is hoped to add a bureau of medical investigation and a children's bureau.

There is much difference of opinion as to the extent to which the Federal Government may constitutionally exercise health powers, but the committee is taking pains to avoid any controversy on this point by confining its recommendations to research and publication, entering into the field of regulation only so far as it affects interstate relations or the District of Columbia. It is hoped that the national capital may become a model city in sanitation as well as in other respects, in accordance with President Roosevelt's well-known plans. By holding up high standards in public and personal hygiene, the national government will aid in the national efficiency, not only directly, but by giving greater prestige and in stimulating to redoubled activity the work now being done by state and municipal boards of health. Public opinion holds sway in matters of health as elsewhere. It is largely for the purpose of impressing public opinion that these international congresses on tuberculosis are held. It is believed that a Federal organization of health, by persistently upholding health ideals and by the demonstration of methods of attaining and maintaining health, will keep the public interest from flagging.

First and foremost among the specific problems to be treated by this national organization is the problem of tuberculosis. At present circulars and pamphlets of information are issued by many state boards of health which might with greater advantage be issued by one authoritative central bureau and utilized by all. The circulation of such pamphlets, if issued by the Federal Government, would be far wider, the cost of distribution far less, and the authority and ability of those who write them would be much greater. Already the Bureau of Animal Industry in the Department of Agriculture has made important contributions to tuberculosis, not only by inspection of meats, but still more by the investigation of tuberculosis in dairy products, particularly butter. Several bills are now before Congress relative to tuberculosis and one was passed at the last session making compulsory the notification of cases of tuberculosis in the District of Columbia. The expansion of such work through a powerful national organization of health would not only give a great impetus to the crusade against tuberculosis but would utilize this crusade to bring about an improvement to American health generally.

Relation of the Proposed National Department of Public Health to Solution of the Tuberculosis Problem in the United States.

DR. CHARLES A. L. REED, Cincinnati: Tuberculosis alone causes the death of 140,000 persons and constant illness of two-thirds of a million more each year in the United States. The disease is preventable. The United States to-day has no national public health agency vested with power competent to cope with the evil. Both great political parties have committed themselves to the creation of such a national public health agency. President Roosevelt has signified his intention to bring to the attention of the Congress, at its session in December, specific proposals looking toward the correction of this unfortunate defect in our governmental organization. The object of my remarks is not to impress this Congress of scientists, for that is unnecessary, but I desire through this body to impress the people of the country with the extreme importance of supporting these proposals, to the end that lives may be saved and that science shall be given due honor in the practical government of men. The fundamental basis of prosperity is the productive energy of the people. It is the human factor, first, last and all the time that counts, but one that is taken all too little into account by publicists when they assume to talk learnedly on the great problems of national economics. I am confident that the chief national legislation of the immediate future will be based on the fact that a man's energy is his best asset, and that its full value depends on his health and his length of years. This movement is fostered, not only by human and economic considerations, but by the fact that the existing public health agencies established from time to time by our national government are insufficient and incoördinate and, to that extent and in consequence of that fact, are both unnecessarily expensive and disastrously inefficient in coping with this devastating evil.

In addition, they are scattered through the various departments of the government, and in consequence of this arrangement, or lack of arrangement, the Secretary of the Treasury is now the chief health official of the United States. The secretary of the Department of Commerce and Labor is in charge of the fundamental basis of a health department—the Bureau of Vital Statistics. The Secretary of Agriculture has the enforcement of the Food and Drugs Act, and also has charge of the Bureau of Animal Industry. The Secretary of the Interior is the sanitary administrator of the territories, of the Indian tribes and of the great national eleemosynary institutions. The Secretary of War has charge of the sanitation of our insular possessions, including the Isthmian Canal Zone. The Secretary of the Navy and the Secretary of War, under the advice and direction of their respective surgeons general, are, of course, in control, as they ought to be, of the health of, respectively, the navy and the army. Many other instances might be given to illustrate the fact that our national public health agencies, considered in the aggregate, are in no possible sense connected with a co-ordinating center or under the direction of an intelligent and purposeful centralized administration.

In considering the formation of a national department of health in relation to the control of tuberculosis, one of the first considerations is the limitation, under our form of government, of the state and national governments respectively. The laws in the various states are entirely inadequate and their complete lack of uniformity renders it impossible for the states to cooperate. And like laws by the states will probably not be enacted to any great extent until, under the initiative of the national government, the states shall send delegates to a representative body, a sort of council of states, which shall meet, as a legislature or the congress meets, in a session or sessions long enough to accomplish satisfactory results, and whose object shall be to formulate bills on various subjects and send them back to the legislatures for enactment. In this way alone can the states move with anything like satisfactory rapidity in meeting the crying demand, for like laws, for like conditions, not only as relates to great sanitary problems, including the problem of tuberculosis, but relative to many other problems that concern the economic and social welfare of the people.

Finally, we should attempt, through a council of states, to secure uniform state laws touching this and other important questions. We should have a strong federal public-health agency with which to do the national side of the work. The existing national public health agency could be assembled by transfer from the various departments in which they are now located into some one of the existing departments, and there organized under authority of additional law on the basis of highest efficiency. These agencies should be assembled in some existing department rather than organized into a separate and

distinct department with representation in the cabinet. The fundamental importance of this health movement, as shown by this great congress, and by hundreds of other congresses and associations, demands that, for its fullest efficiency, it should be accorded the educational and moral force to be derived only from its titular recognition in the departmental scheme of our government. The two propositions fortunately are readily reconciled. This can be done by changing the name of the deparment in which the health agencies are assembled, thus avoiding the multiplication of cabinet officers. Thus, if it shall be found wise to make the Bureau of Vital Statistics the nucleus for the aggregated service, the name of the department in which it is located could be changed to that of "Commerce, Labor and Public Health." Or if it shall be deemed expedient to select the Department of the Interior the name of that department should be changed to that of Education and Public Health, which unlike the present title would mean and stand for something distinctive among our great national interests.

But I insist in the name of the medical profession, in the name of science, in the name of humanity, that a great governmental agency to conserve, as this one proposes to conserve, more lives, more homes, more property, and more money, than any other single agency in the whole plan of government, shall be accorded a status befitting its dignity and its worth to all the people.

SECTION II—CLINICAL STUDY AND THERAPY OF TUBERCULOSIS.

Rest and Exercise in Treatment of Tuberculosis.

DR. F. M. POTTENGER, Monrovia, Cal.: The functions of the body are best carried on when both rest and exercise in suitable proportions can be prescribed. The amount of each must be determined by the natural resisting power of the patient and the pathologic condition present. In prescribing rest and exercise the conditions of the respiratory, circulatory, digestive and muscular systems must all be considered, and special attention must be directed to the condition of the heart, and the ability of the patient to exercise without causing fatigue, increase of cough, shortness of breath, or rise of temperature. Exercise causes toxins to be thrown out into the blood stream, thus producing autointoxications which cause practically the same symptoms as injections of tuberculin; but owing to the fact that the dosage can not be controlled, and that the patient receives said dosage at a time when he is tired and not able to respond to his fullest capacity to the production of antibodies, the autoinoculation can not be considered a scientific method of administering bacterial vaccines. If work is to take the place of carefully prescribed exercise in the treatment of charity patients, it must be prescribed according to the needs of the individual, and the patient must not be permitted either to do hard work or to do more work than is consistent with his powers of endurance.

Ultimate Results of Sanatorium Treatment.

DR LAWRASON BROWN, Saranac Lake, New York: Of the first 300 patients at the Adirondack Cottage Sanitarium, 36 per cent. are untraced and only 10 per cent. of the last 2,400. Of the 1,209 patients now known to be living out of 2,553, 1,058, or 41 per cent. of the whole, are engaged in, or able to do, some work. Of these patients, 353 remain untraced, and if we consider only the 2,200 traced, 48 per cent. are able to work. Out of the 1,209 patients living, 87.5 are still able to work. Sixty-three patients who were discharged from fifteen to twenty-three years ago are still living. When it is considered that fifty years ago no one was ever thought to recover from pulmonary tuberculosis, results such as these are very encouraging.

Day Camp for Consumptives.

DR. DAVID TOWNSEND, Boston: Until recent years there has been little or no provision, in this country, for the type of tuberculous patient who, for one reason or another, is unsuitable for the incipient hospital or sanatorium, and yet is not sufficiently advanced to require treatment in an advanced hospital or home. Germany early recognized the necessity of some such place, and in 1900, largely through the efforts of Drs. Becher and Lennhoff of Berlin, the Red Cross Society opened a day camp for men at Jungfernhaide, near Berlin. In the summer of 1905, the Boston Association for the Relief and Control of Tuberculosis opened in Boston a similar camp, the pioneer one of its kind in this country. Another camp was operated in the summer of 1906, and in 1907 the camp was continued for eight months, closing Feb. 1, 1908. The equipment of these camps consisted of shacks and tents, for kitchen, administration, dining room and various other purposes. There were two nurses and a resident physician in attendance, a cook, two caretakers and several maids. The patients came for the day only, and were given two lunches and a dinner each day. The chief aim of the camp was educational, and much emphasis was laid on this side of the work. Each patient was taught the care of himself and how to prevent infection to others. A careful study of each patient was made and every effort exerted to relieve him from all worry and anxiety. Each patient was encouraged to confide in the matron and medical staff, and nothing was too trivial to receive attention.

Experience has taught that the day camp, when properly conducted, is of value, (1) on educational lines; (2) as it removes, for a time, the sources of infection from the home and the community; (3) as it enables cases which, although suitable for some reason or other can not go to a sanatorium to obtain proper care; (4) as it helps to complete the cure in some patients who have been discharged from a sanatorium. In addition, it has proven that a patient with tuberculosis is not hopeless until he dies. In many cases in the past the disease progressed and the patient died for no other reason than the lack of proper facilties for care. The *per capita* daily cost for an average daily attendance of 64, in 1907, was 51 cents.

(To be continued.)

Medicolegal

Observations of Physician While Collecting Are Not Privileged.

The Supreme Court of Missouri, Division No. 1, says that in the personal injury case of Chlanda vs. St. Louis Transit Co., where the whole trend of the plaintiff's case was to the effect that she could not walk without artificial aid, a physician was not permitted to testify that on a certain date, when he called at her residence relative to a bill for services in her behalf, he saw her walking without the use of crutches, and saw her go up a flight of stairs without their use. This was error.

Conceding that the witness was the plaintiff's physician at the time in question, yet the court thinks the offered evidence was competent. The statutory interdiction on the testimony of a physician or surgeon is salutary, but must be kept well within the banks of the prescribed statutory channel. He is incompetent to testify "concerning any information which he may have acquired from any patient while attending him in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or do any act for him as a surgeon."

The offered testimony did not come within the letter or the spirit of the statute. The physician was making no professional call on the plaintiff. He was not seeking information to enable him to prescribe for her or do any act for her as a surgeon. Admitting that facts gathered for that purpose while acting in a professional capacity are a sealed book, yet in this instance he was neither acting in a professional capacity nor was the fact inquired about in any wise necessary to treat his patient. In the law, as to that fact, the physician was the same as any other bill collector possessed with eyes. According to the common sense of the thing the matter was plainly without the province of a physician, and he was therefore competent to testify.

Things Not Provable in Action for Professional Services.

The Supreme Court of Arkansas says, on the appeal of Henderson & Campbell vs. Hall & Hughes, that the latter parties, two physicians, sued the former, a firm of lawyers, alleging that said firm engaged the professional services of the plaintiffs to visit, examine and report on the physical condition of a woman client of theirs who was alleged to have been injured through the negligence of a railroad company, and that the plaintiffs performed such services, and for the same the defendants agreed that they would pay to them the sum of $200. The answer admitted the employment for the purposes stated, but denied that the defendants had agreed to pay the sum of $200, or any other certain sum, but alleged that they had agreed to pay the sum that the services would reasonably be worth. They alleged that the services were worth $34, but they tendered $40.

Under these circumstances it was permissible for either party to introduce evidence as to the value of the services. But it was error to admit testimony that the plaintiffs brought about a compromise for the defendants with the railroad company, and that their services were worth $200 to the defendants because they made their case for them and got a compromise for them, that being without the issues, and highly prejudicial. The suit was for recovery of the value of medical services, and not for services as negotiators of a compromise.

Likewise it was error to admit the testimony of several physicians to the effect that the plaintiffs' services were worth $200 because they were not ordinary services, and the further fact that the plaintiffs might have had to attend court as witnesses. As the case of the client was settled before this controversy arose, it was pure speculation as to what the physicians might have been called on to do had not the case been settled. They were called to render professional services in a physical examination of a woman, and were entitled to pay for the value of those services, and not for any speculative incidents that might or might not have followed from this service.

Power of Conductors to Employ Surgeons in Emergency Cases.

The Supreme Court of Arkansas says, in the case of Bonnette vs. St. Louis, Iron Mountain and Southern Railway Co., an action brought by a surgeon, that it was alleged a stranger had been run over at night, and seriously or fatally injured at a station many miles distant from the principal offices of the company and from the residences of its principal officers, and that the conductor in charge of the train, and as agent of the company, employed the plaintiff, a resident surgeon, to render professional services to the injured man, and that it was necessary to amputate both thighs, which was done, with assistance, acting at the request and under the employment of said conductor. The company demurred to the complaint on the ground that it failed to state facts sufficient to constitute a cause of action against the company as it did not state that the conductor had any authority to contract for the services in question and failed to state any facts that would bind the company for the contract of the conductor in employing the plaintiff. The demurrer was sustained in the lower court, but the Supreme Court holds that that was error.

The Supreme Court quotes from several cases, as it says, to show that the authorities whether in the case of a stranger and trespasser or of an employé and passenger hold the company liable for failing to exercise ordinary care to administer to the absolute needs of the ones whose unfortunate injury it has produced, notwithstanding it may have been without fault in producing such injury, and notwithstanding the injury may have been the direct result of the party's own negligence. In so holding the company liable in such an emergency, it will be observed that the rationale of the doctrine, whether in the case of a stranger and trespasser, or of an employé or passenger, is found in the duty imposed by the dictates of common humanity. The authorities stress the moral obligation and find from that the legal duty to alleviate as far as possible the suffering and to administer to the necessities which the company has contributed, however innocently, to produce.

This court confesses, if the duty and the consequent liability for failure to discharge that duty grow out of the obligations which the impulses of our common humanity would suggest and impose, under such circumstances, then the court does not see that the status or relationship of the injured to the party producing the injury could affect the question of the plaintiff's right to recover; for, from the humane viewpoint, clearly it could make no difference whether the helpless and unfortunate victim of the accident were trespasser, employé or passenger. But the court merely cites the cases referred to in order to show the extent to which the authorities have gone.

It was here a question of the authority of the conductor to act for his company. The emergency created that authority. Some one must have authority to represent the company under such circumstances. The conductor was the highest agent on the ground, and was in command of the train that did the injury. Before sufficient time had intervened to ascertain whether the accident was caused by the negligence of the company, he certainly had at least the implied authority to protect his company by doing what might be necessary to lessen the damages in the event it should be afterwards ascertained that the company was liable. This authority would be sufficient to bind the company for his contract with the surgeon, but not for the surgeon's contract with others.

Constitutionality of Law Providing for the Detention and Treatment of Habitual Drunkards as Persons of Unsound Mind.

The Supreme Court of Minnesota says, in the case of Leavitt vs. City of Morris, that there is a clear distinction between a person who gets drunk and an insane person, and that it may be conceded that one who is simply a drunkard, but is able properly to take care of himself, his family, and his property, and is not a menace to the public, cannot be committed to and detained in a hospital for inebriates without his consent, for the personal rights and liberties of such a person are guaranteed by the constitution.

But the state, in the exercise of its police power, has the undoubted right to punish drunkenness, and to provide for the detention and treatment in hospitals controlled by it of those who are habitual drunkards, and have so far lost the power of self control that they are either incapable of properly caring for themselves or are a menace to the public weal. The state has the power to reclaim submerged lands, which are a menace to the public health, and make them fruitful. Has it not, also, the power to reclaim submerged men, overthrown by strong drink, and help them to regain self-control?

The state for many years has punished drunkenness as a crime by a fine or imprisonment. The trend, however, of legislation is to treat habitual drunkenness as a disease of mind and body, analogous to insanity, and to put in motion the power of the state, as the guardian of all of its citizens, to save the inebriate, his family, and society from the dire consequences of his pernicious habit.

Chapter 288 of the Minnesota laws of 1907, entitled, "An act creating and establishing a hospital farm for inebriates," etc., is of such a character. It is not a penal, but a paternal, statute, seeking, not the punishment of the inebriate, but the safeguarding of his interests and the safety of the public, by treating him as, what he is in fact, a man of unsound mind, and placing him under the guardianship of the state, to the end that he may be healed of his infirmity.

This statute is limited to habitual drunkards—that is, to persons who have lost the power or will to control their appetite for intoxicating liquors or narcotics, and have the fixed habit of drunkenness, who are in need of care and treatment, and to those it would be dangerous to leave at large. The difference between such persons and insane persons is one of degree only, and they lawfully may be so treated by the state without any impairment of their constitutional rights. The term "inebriate," as used in this statute, "includes every species of chronic inebriety"; that is, habitual drunkenness. Hence an inebriate, as defined by the act, is an habitual drunkard.

Wherefore, the court holds that the general scheme provided by this statute for the commitment to and detention at a hospital farm, maintained and controlled by the state, of the class of inebriates designated in the act, is constitutional.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

November 5.

1 *Introduction of Surgical Anesthesia. W. H. Welch, Baltimore.
2 *Surgery of the Prostate. S. Alexander, New York.
3 *Total Extirpation of the Lower Pharynx for Epithelioma, with Permanent Esophagostoma; Surgical Treatment of Cancer. M. H. Richardson, Boston.
4 *Bursitis Subacromialis, or Periarthritis of the Shoulder Joint. (Subdeltoid Bursitis.) (Continued.) E. A. Codman, Boston.
5 Serum Treatment of Epidemic Cerebrospinal Meningitis, with Report of Twenty-two Cases. (Concluded.) F. T. Fulton, Providence, R. I.

1. **Surgical Anesthesia.**—Welch discusses the introduction of surgical anesthesia from a historical and philosophic viewpoint, and emphasizes its benefit to mankind.

2. **Surgery of the Prostate.**—Alexander cites his previous views and practice, as published in the *Annals of Surgery*, in 1905. He gives the reasons which, by the end of that year, led him to conclude either that the technic was deficient and drainage insufficient, or that his views in regard to the pathologic anatomy of prostatic suppurations were imperfect. These considerations led him to treat prostatic abscess by prostatectomy through a median perineal incision, enucleating the lateral lobes through the wall of the prostatic urethra. He analyzes the results of treatment in gonorrheal prostatic abscesses from 1905 to February, 1908, either by perineal section and drainage, or by prostatectomy. He discusses the symptomatology and describes in detail his present operation. In no case has he found any complaint in regard to the character of the erection or the ability to have sexual intercourse. The sensation is not impaired, but the discharge of seminal fluid at the time of the orgasm is entirely absent. He has not altogether abandoned perineal section and drainage, but considers prostatectomy better practice in most cases.

3. **Cancer.**—Richardson holds that we must confine new methods—trypsin, *x*-ray, toxins, etc.—to inoperable cases, for he has seen many operable and favorable cases drift under them to inoperability and death.

4. **Bursitis Subacromialis.**—In this issue Codman continues the discussion of this subject in respect of prognosis and treatment.

Medical Record, New York.

November 7.

6 *Development of the Legal Relations Concerning the Insane, with Suggestions for Reform. A. M. Hamilton, New York.
7 *Operative and Non-operative Fibroid Tumors of the Uterus. F. D. Reese, Cortland, N. Y.
8 *Bituminous Coal Smoke: Its Chemistry and Effects on the Health of Man and Plants, Works of Art and Commerce. J. W. Wainwright, New York.
9 Chronic Purulent Otitis Media. A. Wiener, New York.
10 Fracture and Dislocation of the Neck at the Sixth Cervical Vertebra in a Man of 60. Recovery. G. H. Williams, Fishkill-on-Hudson, N. Y.
11 Important Flatfoot Facts; for Assimilation and Dissemination. E. A. Tracy, Boston.

6. **Legal Relations of the Insane.**—Hamilton makes the following recommendations:

1. There should be obligatory information of the commissioner in lunacy in regard to the existence of all cases of insanity.
2. Though the commissioner in lunacy may have power to license private institutions, he should also be empowered to formulate additional requirements which would put some of them on a much higher standard than they occupy at present.
3. Commitments are chiefly to be looked on as reinforcements by the judge of the persuasions exerted by the friends, physician and family of the patient, and should be resorted to only when the latter can not be persuaded to go to the asylum.
4. Everything should be done to make the appeals of committed patients available. There should be severe punishment for the suppression of letters, or interference in any way with the alleged lunatic's rights.
5. There should be material reform in the attitude of the law regarding capacity and criminal responsibility, insane acts in themselves, in any relation they may have, receiving more weight than heretofore.
6. There should be a departure from conventions in old and arbitrary definitions.
7. Special insane acts should be studied with reference to the crime itself in a way they have not been studied up to this time.
8. The attitude of the courts should be much more charitable to the medical witness than it is to-day, the intelligent medical man being put in possession of all the facts in the case and not being obliged to answer restricted questions which place him in a false position, and which are deficient in the presentation of the facts.
9. In all matters involving the determination of capacity or responsibility the medical man should be required to prepare a brief which should form the basis of his cross-examination, and this, if necessary, must be supported by extraneous evidence, which has received the sanction of the court as to heredity, previous history, and facts communicated by others.

7. **Non-Operative Fibroids.**—Reese concludes that dysmenorrhea always calls for a thorough examination of the pelvic organs in uterine fibroid. Surgical treatment should be instituted only on a clear diagnosis and a positive indication. Mixed tumors of the uterus should be removed as soon as diagnosed. Simple fibrous tumors, save in exceptional cases, are amenable to constitutional and local treatment, and so do not demand operation.

8. **Bituminous Coal Smoke.**—Wainwright insists that bituminous coal smoke materially interferes with the welfare of the community: 1, By leading to fog and rain; 2, by shutting out sunlight and depriving us of certain qualities of light, of great importance in regard to changes in organic matter; 3, by depositing soot. He urges its suppression because a smoky atmosphere, by its exclusion of light, its content of suspended acid and irritating particles, is harmful to the tissues of the nose, throat, eyes, and especially the lungs and air passages, whether in a healthy or other condition; aggravates the discomfort of those suffering from all forms of heart disease; increases the distress of those who have nervous complaints; lowers the tone of the general health; is a peril to the aged; and diminishes buoyancy of spirit, as well as reduces still further an already lowered resistance to disease.

New York Medical Journal.

November 7.

12 *Reflex Neuroses Arising from Ocular and Nasal Abnormities. S. L. Zeigler, Philadelphia.
13 The Mechanico-biologic Standpoint in Medical Problems. J. Wright, New York.
14 Purposes and Objects of Morbidity Statistics and the Methods of Collecting Them. J. M. Eager, U. S. Public Health and Marine-Hospital Service.
15 *The School Child. J. W. Van Derslice, Oak Park, Ill.
16 Ancient Greek Medicine. C. W. Super, Athens, Ohio.
17 *Obstetrical Paralysis. K. Osterhaus, Norfolk, Va.
18 Cause of Premature Separation of the Placenta. S. Robbinovitz, Brooklyn, N. Y.

12. **Reflex Neuroses.**—Ziegler discusses the influence of the eye on reflex neuroses, the nasal origin and individual manifestations of reflex neuroses—headache, migraine, localized muscular spasms, chorea, minor epilepsy, gastric neuroses and neurasthenia—with illustrative cases. He concludes:

1. The eye and the nose are undoubtedly most important factors in the etiology of reflex neuroses, and should, therefore, be carefully examined and positively excluded before beginning a search for other causes.
2. Ocular and nasal reflexes possess many manifestations in common, which should be carefully differentiated at the earliest possible moment.
3. Eyestrain, whether from ametropia, subnormal accommodation or muscular imbalance, should be carefully corrected in order to eliminate the eye as a causative factor.
4. An atrophied eyeball, with contracting ciliary scar, should be enucleated.
5. Pressure contact in the nose will always excite some reflex disturbance when any hyperesthetic area is impinged on, and should, therefore, be eliminated.
6. Every obstruction to free breathing should be removed.
7. Recurrence of any reflex neurosis demands re-examination and renewed search for the original exciting cause.

15. **The School Child.**—Van Derslice says that the development of the intellectual capacity is only a small part in child education. The development of character and of physical welfare is also vastly important. Some of the contributing factors of stress and strain of the school child lie in the child, such as hereditary dyscrasia, physical, mental and moral conditions, home environment, the artificial life in large cities, disorders of nutrition, etc. In the school are found conditions of school buildings, sanitation, improper desks and seats, lighting, ventilation, type and paper of text-books, lack of recreation, hours of confinement, lessons, schedule, etc. Physical and mental lassitude should not be dogmatically attributed to the amount of work. Investigation should be made in the other directions also. He discusses the hygiene of the home, food, regular duties and responsibilities, employment, lack of harmony between the parents and the public school, social distraction during school life, sanitation of schools, infectious diseases and curriculum, and says that the over-

crowding of the curriculum is due to three causes: 1, every child must take all the work, regardless of personal or individual need; 2, whatever the last generation had must go into the curriculum of the present one; 3, domination by the colleges.

17. **Brachial Birth Paralysis.**—Osterhaus discusses the nature, pathology, varieties—upper, lower and total arm paralysis—diagnosis, prognosis and treatment of this form of paralysis. He considers that to wait at least a year or two years after the onset of the paralysis before operating would be entirely proper, as not only would the operative field be enlarged, but the danger of shock will be lessened. He repeats Taylor's description of the operative technic. It occurred to him that the application of the principle of bridging nerves might be of service by allowing scar tissue to take the place of the catgut strands commonly employed. To this end the nerve junction was carefully lifted on two fingers, the nerve sheaths having been previously split up for a considerable distance above and below, and with a fine sharp tenotome the nerve fibers constricted by the cicatricial bands were thoroughly dissociated. Cargile membrane was then applied loosely and the wound closed. The return of function which followed was almost startling in its rapidity. The theory that the regenerating axis cylinders will use the strands of degenerated nerve fibers and scar tissue as bridges on which to extend themselves, similarly to vines on wire, certainly seems sound, and it only remains to prove or disprove this theory in actual practice. He urges a thorough trial of this method in all cases of nerve injury.

Lancet-Clinic, Cincinnati.

October 31.

19 The New Pathology. M. Whitacre, Cincinnati.
20 Syphilitic Crises Simulating Surgical Emergencies. M. A. Austin, Indianapolis.
21 Pre-Cancerous Influence of Gastric Ulcer. W. D. Haines, Cincinnati.

Archives of Internal Medicine, Chicago.

September.

22 *Histoplasmosis: A Fatal Infectious Disease Resembling Kala-Azar, Found Among Natives of Tropical America. S. T. Darling, Canal Zone, Panama.
23 *Influenza and Influenzal Pneumonia. D. J. Davis, Chicago.
24 *Heart Block in the Ventricular Walls. A. W. Hewlett, San Francisco.
25 Rôle of Ferment Reversions in Metabolism. A. E. Taylor, San Francisco.
26 *Blood-Pressure Lowering Reflexes from Irrigation of the Chest in Empyema. J. A. Capps and D. D. Lewis, Chicago.
27 *The Volume and Specific Gravity of Organs. S. L. Olsho, Philadelphia.
28 *Ocular Tuberculin Reaction. L. F. Frissell and P. Van Ingen, New York.
29 Parasites Found in New York City. H. S. Patterson, New York.
30 Multiple Ependymal Glioma. P. Bassoe, Chicago.

22. This article was commented on editorially in THE JOURNAL, Oct. 3, 1908, p. 1159.

23. **Influenza and Influenzal Pneumonia.**—Davis arrives at the following conclusions:

1. In many epidemics of clinical influenza or grip, the influenza bacillus plays little or no part as an etiologic organism.
2. These epidemics appear to be due to a variety of organisms—the *Pneumococcus*, *Streptococcus pyogenes*, *Streptococcus mucosus*, and *Micrococcus catarrhalis* being most commonly found in the secretions. An organism morphologically and culturally identical with meningococcus was found in one case.
3. Complications following these cases are often serious and usually due to *Pneumococcus*, *Streptococcus pyogenes* and *Streptococcus mucosus*.
4. The influenza bacillus is often found in so-called influenzal pneumonia, but not in all cases. It can not be considered the primary cause. An abundant mixed bacterial flora is characteristic of the respiratory secretions in these cases.
5. Influenza bacilli are commonly found in a great variety of infections.
6. Experiments both on animals and on human beings demonstrate that these bacilli possess pathogenic properties. They are often, or at least sometimes, non-virulent as they occur in the secretions.
7. As secondary invaders they undoubtedly unfavorably influence other primary infections.

24. **Heart Block.**—Hewlett reports clinical observations which lead him to the following conclusions:

1. Ventricular contractions may cause waves on the jugular pulse with little or no effect on the apex beat.
2. Such contractions may be followed immediately by normal contractions without a diastolic period.
3. The right ventricle may begin its contraction distinctly later than the left.
4. In his own case these were largely strophanthin effects.
5. They are probably to be interpreted as instances of intraventricular heart block.

26. Abstracted in THE JOURNAL, June 6, 1908, p. 1930.

27. **Volume and Specific Gravity of Organs.**—Olsho recommends for the determination and accurate registration of the size of any organ, the following plan: Each organ as it is removed is submerged in a vessel filled with water to a level at which an overflow is provided. The water displaced overflows into a container graduated in cubic centimeters; the amount so obtained represents the volume or displacement of the organ in cubic centimeters. The organs are weighed in grams; the weight divided by the displacement, equals the specific gravity. The heart is submerged opened or unopened. A "voluminous" emphysematous lung is pressed beneath the surface of the water by a rod thrust into the bronchus. Olsho gives results from 100 postmortems at the Philadelphia Hospital, in relation to the heart, kidney, liver, spleen and lungs, to determine the practical value of the method suggested, and on these examinations he bases the following conclusions:

1. Parenchymatous degeneration lowers the specific gravity of organs proportionately to the degree of parenchymatous change.
2. Fibrotic change, while diminishing the volume of the organ, also raises its specific gravity proportionately to the amount of fibrosis.
3. Although useful in systematic studies of all organs, the specific gravity records are most striking in pulmonary affections.

28. **Ocular Tuberculin Reaction.**—Frissell and Van Ingen classify the results of other observers and report the results of their own experiments in 166 cases, from which they reach, in brief, the following conclusions:

1. In apyrexial cases the test has the same value as the subcutaneous method. In pyrexia the conjunctival method is alone applicable.
2. So specific a reaction as the tuberculin probably indicates in all cases the presence of tuberculosis.
3. The method appears to be particularly helpful in the case of children.
4. In cases without symptoms it is perhaps safer at present to accept the reaction as a danger sign.
5. A negative reaction by no means excludes a diagnosis of tuberculosis.

American Journal of Obstetrics, York, Pa.

October.

31 *An Experimental Study on Hemorrhage Following Section of the Uterine and Ovarian Vessels in Dogs and Its Possible Bearing on Ruptured Pregnancies. H. Robb, Cleveland.
32 *Superiority of Primary Over Secondary Cesarean Section. S. P. Warren, Portland, Me.
33 Fourteen Cases of Cesarean Section. J. O. Polak, Brooklyn, N. Y.
34 *Infarction of Renal Cortex in Pregnancy. O. Klotz, Montreal.
35 *Ovariotomy During Pregnancy. C. G. Cumston, Boston.
36 Vincent's Angina During Pregnancy. F. Royer, Philadelphia.
37 Case of Fetal Ichthyosis; Placenta and Membranes Involved. H. R. Coston, Birmingham, Ala.
38 *Causes of Abortion. F. J. Taussig, St. Louis.
39 Criminal Abortion. H. H. Jackson, Houlton, Me.
40 Artificial Infant Feeding for the General Practitioner. G. R. Pisek, New York.
41 *Angioneurotic and Other Examples of Essential Edema in Children. M. Schwarz, New York.

31. Abstracted in THE JOURNAL, July 4, 1908, p. 71.

32. **Superiority of Primary Over Secondary Cesarean Section.**—Warren discusses the paper by Reynolds of Boston at the 1907 meeting of the American Gynecologic Society (*Boston Medical and Surgical Journal*, Oct. 31, 1907, abstracted in THE JOURNAL, Nov. 16, 1907, p. 1714), in which he favors delivery by an elective abdominal section, rather than by a difficult intrapelvic operation, either at term or prematurely. Warren, while agreeing that deformities of the pelvis, absolute in fractions of inches or centimeters, or relative in connection with large children, are much more frequent than is ordinarily expected, asserts that it is not to be expected that the general practitioner will spend much study over fractional differences in pelvic diameters. The refinements of pelvimetry and facility in the use of complicated pelvic calibrators are for the expert. From a fairly extensive acquaintance with the obstetrical work of the general practitioner, he is convinced that most of the mishaps of delivery are due, not so much to simple pelvic insufficiency as to failure to recognize, before operation, malpositions of the presentation or that the child is too large for even a normal pelvis. The conscientious practitioner will remedy either of these two mistakes by careful study of conditions and environment; the other man will never rise to the level of science or art, and will always be content with brute force.

34. **Infarction of Renal Cortex in Pregnancy.**—Klotz gives the clinical history and postmortem findings in such a case,

and compares them with three other reported cases of a similar character and discusses the causation. He does not agree that an endocarditis was the causative factor in his case, but believes from the clinical evidence of rapidly developing suppression, and from the microscopic picture of the granular thrombi, that the thrombosis occurred simultaneously in all the renal vessels, as a result of certain metabolic changes of secretion in pregnancy. What these changes are he can not venture to say, but, as a result, there has occurred a dissolution of the red-blood cells in this particular part of the arterial tree, and the débris—and possibly the agglutination of these cells—has led to a plugging of the smaller arteries. To be exact, this process is rather an embolic one, coupled with thrombosis, and is similar to the agglutinated red-cell thrombosis in the liver. Evidence is lacking to assert that an increased coagulability of the blood had been produced in this portion of the arterial system and had led to a blocking of the cortical arterial stream.

35. Abstracted in THE JOURNAL, Oct. 24, 1908, p. 1458. Also published in the *Journal of Obstetrics and Gynecology of the British Empire*, September, 1908.

38. **Causes of Abortion.**—Taussig points out that the causes of abortion are usually considered in an unsystematic and illogical way. We must endeavor to differentiate between conditions of the uterus which predispose to such an expulsion of the ovum, and conditions which excite the uterus to get rid of its contents. He proposes the following classifications. The predisposing causes are:

1. Increased sensitiveness to nerve irritation (temperament, frequent abortions, menstrual period).
2. Greater tendency to placental thrombosis (inflammation of endometrium, congestion).
3. Lessened resistance to expulsion (cervical tears or amputation).

The exciting causes are:

1. Mechanical Irritation: (a) transmitted (blow, fall, dancing, railroad journey, lifting heavy objects, constipation); (b) direct, (1) to outside of uterus (adhesions, malposition, tumors, examination, laparotomy); (2) to inside of uterus (instruments, hemorrhagic exudates, hydramnios, tumors).
2. Thermic Irritation: (a) general (sea bath); (b) local (hot douche, sitz bath).
3. Toxic Irritation: (a) chemical toxins (ergot, carbon dioxid, lead-poisoning); (b) bacterial toxins (maternal smallpox, measles, etc.); (c) placental toxins, hyperemesis, chorea, eclampsia.
4. Nerve Irritation: (a) psychic (fright, pain, shock); (b) reflex (external genitals, breast, nose).
5. Death of Fetus: (a) congenital inanition (illness of parents, alcoholism, too frequent coitus); (b) congenital deformities (primary in ovum, amniotic adhesions); (c) interference with nutrition: (1) maternal (anemia, tuberculosis); (2) placental (mole degeneration, thrombosis); (3) umbilical (twisted cord, true knot, constrictions); (d) infectious diseases (syphilis, smallpox, typhoid, pneumonia, etc.); (e) hyperpyrexia.

41. **Essential Edema in Children.**—Schwarz discusses the prevailing theories as to the physiologic and pathologic factors which enter into the formation of both local and general edema. He discusses only those varieties of essential edema which he has personally observed, and reports five cases, the last, one of acute circumscribed edema. Many cases of this condition are of unknown origin and have to be classed as idiopathic. As to symptoms, the skin may be normal, but usually there is a pinkish white glassy appearance, moreover, the parts are elastic. The involvement of the upper respiratory passages interests the pediatrician and the laryngologist. In the nose the disease resembles hay fever in sudden onset, but there is little sneezing and no excessive secretion. In the larynx, it constitutes one of the dangers of the disease, the attacks of edema usually coming on during sleep, but sudden dyspnea may occur at any time. In the lungs it may give rise to acute edema. As abdominal symptoms, colic, vomiting and diarrhea are noted. The kidney may be involved, slight traces of albumin and even blood being present. Transient aphasia may be due to the transient edema. Schwarz discusses its differentiation from giant urticaria. Osler's symptom-complex of exudative erythema with visceral lesions, exophthalmic goiter, purpura and the hysterical edemas. The prognosis is usually good, edema of the larynx being the only cause of death. Abdominal symptoms are often severe. Morphin seems to be the only thing that helps. Scarification and application of suprarenal extract to the edematous parts is recommended in edema of the larynx. Tracheotomy may be necessary. Avoidance of predisposing articles of diet and relief of constipation are prophylactic measures.

American Journal of Physiology, Boston.

October.

42 *Excretion of Kreatinin and Kreatin in Health and Disease. P. Shaffer, New York.
43 Improved Outflow-Recording Apparatus. C. J. Wiggers, Ann Arbor, Mich.
44 Action of Curara and Physostigmin on Nerve Endings or Muscles. C. W. Edmunds and G. B. Roth, Ann Arbor.
45 Action of Barium Chlorid on the Fowl's Muscle. C. W. Edmunds and G. B. Roth, Ann Arbor.
46 *Adjustment of Paramecium to Distilled Water and Its Bearing on the Problem of the Necessary Inorganic Salt Content. J. F. Daniel, Baltimore.

42. **Excretion of Kreatinin and Kreatin.**—It has been usually believed that since kreatinin and kreatin are closely related chemically, one might easily be transformed into the other in metabolism, and that the kreatinin of the urine might be derived either from kreatin ingested in meat or formed in the muscle. Shaffer, using Folin's method, has estimated the kreatinin and kreatin in the urine in both normal and pathologic conditions. He reaches the following conclusions:

1. The amount of kreatinin excreted by strictly normal individuals is between 7 and 11 mg. kreatinin-nitrogen per kilo of body weight. The amount excreted by any one individual is constant, not only from day to day, but from hour to hour; and the amount is independent of the volume of urine as well as of the total nitrogen.
2. The kreatinin excretion of pathologic subjects is usually low, varying from the normal to 2 mg. kreatinin-nitrogen per kilo of body weight in twenty-four hours. The amount of kreatinin-nitrogen per kilo—the kreatinin coefficient—shows a direct parallelism with the muscular development or strength, or "muscular efficiency," of the individual.
3. Kreatinin is not an index of the total endogenous protein katabolism. Individuals with exophthalmic goiter and others in whom the total endogenous katabolism is probably much increased may excrete very little kreatinin.
4. Kreatin is derived from—and its amount, expressed in milligrams per kilo body weight, is an index of—some special process of normal metabolism taking place largely, if not wholly, in the muscles. On the intensity of this process appears to depend the muscular efficiency of the individual.
5. The kreatinin excretion is slightly increased in acute fevers, and in this condition does not run parallel to the muscular efficiency of the individual.
6. Kreatin is not a normal product of endogenous metabolism, and is not present in normal urines, unless the individual has taken kreatin with the food.
7. Kreatin may be excreted by individuals with acute fevers, in the acute stages of exophthalmic goiter, in other conditions in which there is a rapid loss of muscle protein, and by women during the postpartum resolution of the uterus.
8. The source of endogenous kreatin is probably the kreatin of the muscle tissues, and its appearance in urine probably indicates that muscle protein is being absorbed.

46. **Adjustment of Paramecium.**—Daniel's investigations indicate that the destructive action of distilled water on animal organisms is due to the sudden change in media. Great difference in the power of resistance to this action is shown by different organisms. Organisms transferred gradually lived for days without food in a purer water than it took to kill the control animals suddenly subjected to it. The difference in resisting power may explain the differing results reported by various observers. The adjustment of animals to the conditions under which they live, and their power of becoming adjusted by a slow process to new conditions is one of the most important matters requiring consideration in dealing with the effects of environmental agents.

American Medicine, Burlington, Vt.

October.

47 Chronic Constipation in Infants and Children. L. Kerr, Brooklyn.
48 Adrenalin Therapy. S. Floersheim, New York.
49 *Secondary Nephritis, with a Case of Transplacental Typhoid Infection. J. O'Malley, Philadelphia.
50 The Pupil in Extraocular Disease. H. C. de V. Cornwell, New York.
51 French Clinics in Neurology and Psychiatry. T. A. Williams, Washington, D. C.
52 Hot Baths at Hot Springs. M. R. Richards, New York.
54 Tuberculosis Apparently Cured by Accidental Inhalation of Lime Dust. S. C. Boston, West Grove, Pa.
55 Middle Ear Aspirator. P. R. Wood, Marshalltown, Iowa.

49. **Secondary Nephritis.**—O'Malley presents cases of secondary nephritis and draws attention to the necessity of watching the kidneys in the relapse of infectious diseases, especially typhoid. These apparent relapses are often nephritic affections, and not a recurrence of the original disease. We should be as careful in other infectious diseases with regard to the kidneys, as we are in scarlatina.

Iowa State Medical Journal, Des Moines.

October.

56 *Oration on Medicine. Iowa State Medical Society. J. M. Emmert, Atlantic.
57 *Principles of the Treatment of Peritonitis Based on Physiologic and Pathologic Conditions. W. B. LaForce, Keokuk.
58 *Toxemias of Pregnancy. J. F. Herrick, Ottumwa.
59 The Newspaper and the Advertising Quack. E. J. Butterfield, Dallas Center.
60 Diphtheria Antitoxin in Treatment of Exophthalmic Goiter. H. T. Walker, Dubuque.

56. **Oration on Medicine.**—Emmert discusses the recent advances in medicine, the crusade against venereal disease, and the treatment of mental defectives, degenerates, criminals, etc.

57. **Peritonitis.**—LaForce discusses the anatomy of the peritoneum, the pathology and bacteriology of peritonitis, and the question of drainage and material. He considers the following helpful processes of inflammation: Hyperemia, serum exudation, fibrin formation chemiotaxis, leucocytosis, lymphangitis and thrombosis, and granulation tissue, and shows how they offer indications for treatment. He also discusses the part played by the omentum, the peritoneal endothelial cells, and the antiperistaltic power of the large intestine, in relation to the process of absorption.

58. **Toxemia in Pregnancy.**—Herrick, in summing up his paper, says that the disturbances of pregnancy are with few exceptions caused by toxemias. The toxins have their origin in the increased metabolism of the mother, the enormous waste of a rapidly growing child, and in all probability partially in the chorionic tissue of the placenta. The normal woman with her reserve capacity to deal with excess of waste passes these ordeals unscathed. Her less fortunate sister has less capacity and is overwhelmed by the excess of toxic materials. Just where the failure lies is a matter of debate, but recent observations and experiments point to a failure of the anabolic and catabolic processes in the body which are carried out by ferments. In other words, there is a failure in the production of the necessary ferments to break down these wastes for elimination. This failure is not due primarily to disease of the kidney or liver as is commonly believed, but these organs suffer with all others from the toxemias. Rational treatment of these conditions should look to the correction of metabolic faults and the increase of the tissue ferments, the free and rapid elimination of wastes by occasional doses of mercurials followed by large doses of magnesium sulphate together with a free laxative effect, produced preferably with magnesium sulphate, which may be given in small doses every morning or even in dram doses two or three times a day with plenty of water. This, with plenty of water at all times, and possibly intestinal antiseptics, will relieve many patients. In diet the proteids should be reduced to the lowest possible quantity. Fruit and vegetables, with milk and cereals, should constitute the chief support of the patient. An exclusive milk diet is necessary at times. The facts that imperfectly developed or diseased thyroids are found in many cases and that extirpation of the thyroids in pregnant animals produces albuminuria and toxemias, would suggest the use of thyroid extracts. Care should be taken in their administration, since they are among the most powerful therapeutic agents known. Finally, the author believes that by careful observation and management eclampsia may be prevented.

California State Journal of Medicine, San Francisco.

October.

61 *What Is a Practical Examination in Anatomy? D. L. Tasker, Los Angeles.
62 *Prognosis and Treatment of Tuberculous Laryngitis: An Analysis of Sixty-one Cases. F. M. Pottenger, Monrovia.
63 *Treatment of Aneurism by Direct, Gradual Arterial Closure. R. T. Stratton, Oakland.
64 The American Medical School and Its Entrance Requirements. D. S. Jordan, Palo Alto.
65 Legal Aspect of an Incision, Especially of an Abdominal Incision. H. J. Kreutzmann, San Francisco.
66 A Normal Labor. W. M. Barrett, Redwood City.
67 Preretinal Hemorrhage. C. S. G. Nagel, San Francisco.
68 Bacteriology and Pathology of Plague. W. B. Wherry, San Francisco.
69 The Ocular Tuberculin Reaction. E. F. Glaser, San Francisco.
70 The Housing Problem. T. Coffey, Los Angeles.

61. **Anatomy.**—Tasker quotes a number of answers given at the state board examination to questions on anatomy, to demonstrate the distorted ideas of the human frame held by many practitioners. He has devised a plan of examining whereby the candidate could use his practical knowledge, instead of perhaps losing his bearings in descriptive terminology. To this end a rubber stamp was made of an outline cut such as those used for clinical records. The candidate was asked to outline the heart and liver on this cut. Tasker reproduces nine answers for ocular demonstration to the profession that there is something radically wrong in the teaching of anatomy and that the most practical questions in the whole examination bring forth absolutely staggering answers.

62. **Tuberculous Laryngitis.**—As a result of an analysis of 61 cases Pottenger arrives at the following conclusions:

1. When tuberculosis of the larynx is diagnosed early the prognosis is about the same as in tuberculosis of the lung when diagnosed early.
2. Chronic thickening of the larynx always calls for careful expert examination of the lungs, to determine the presence or absence of pulmonary tuberculosis, and if the latter is found, the evidence is strongly in favor of the tuberculous nature of the laryngeal lesion.
3. Local applications will not cure tuberculosis of the larynx. The cure comes through the patient's body fluids.
4. Tuberculosis of the larynx is not a separate disease, but a complication, and a rational treatment consists in the treatment of it as a part of a tuberculous process elsewhere, usually of the lungs.
5. Tuberculin and the other tubercle vaccines, intelligently administered, are of inestimable value in establishing immunity and bringing about a cure in tuberculous laryngitis.

63. **Aneurism of the Abdominal Aorta.**—Stratton concludes that the following points seem to be true in regard to direct, gradual, arterial closure in the treatment of aneurism of the abdominal aorta:

1. The sac can be filled with active or stratified coagula by that method.
2. The arterial tunics can safely endure the necessary manipulation and pressure.
3. Partial, rather than complete, arterial closure will ordinarily be the safest and most effective means.
4. The lumen of fully patulous arteries supplying the viscera and emanating from the sac, as well as the main blood current down the artery, can be maintained.
5. The general vitality of a proportion of patients afflicted with the disease is sufficient to endure the necessary operative interference.

Illinois Medical Journal, Springfield.

October.

71 Significance of Inflammation and Its Treatment. S. C. Stremmell, Macomb.
72 *Diagnosis in Spinal Cord Surgery. J. Grinker, Chicago.
73 *Fracture of the Base of the Skull, with Diastasis of Left Temporo-Parietal Articulation, Ending in Complete Recovery. G. De Tarnowsky, Chicago.
74 *Traumatism of the Brain. J. W. MacDonald, Aurora.
75 *Ophthalmia Neonatorum. W. O. Nance, Chicago.
76 *Hospital Construction. A. J. Ochsner, Chicago.
77 Perforation of Uterus During Curettage and Excision of Fifteen Feet and a Few Inches of Intestine, with Recovery. W. Park, Chicago.
78 *Ludwig's Angina: Report of Four Cases. G. N. Pratt, Chicago.
79 Commoner Inflammatory Diseases of the Eye and Their Diagnosis. T. A. Woodruff, Chicago.

72 and 75. Abstracted in THE JOURNAL, June 27, 1908, p. 2152.

73 and 74. Abstracted in THE JOURNAL, June 13, 1908, p. 2016.

76. An extensive article by this author on hospital construction appeared in THE JOURNAL, Sept. 21, 1907, p. 990.

78. **Ludwig's Angina.**—Pratt reports four cases in detail, in order to emphasize the lack of constitutional symptoms and the early and severe involvement of the air passages; the former appearing in no instance until after a longer time than usually suffices to end the disease one way or the other; in other words, the longer the disease lasts the more chronic its course, the greater probability of constitutional symptoms from a toxemia; but also the longer a patient lives the greater the chances of recovery. It seems but logical, therefore, to assert that death is due to respiratory involvement and that the part played by the infective agent from a constitutional standpoint is but secondary.

Alabama Medical Journal, Birmingham.

October.

80 *Some Causes and Evils of Mouth Breathing. W. G. Harrison, Birmingham.
81 Blood Pressure in Disease and Injuries of the Brain. W. H. Wilder, Birmingham.

82 Treatment of Gonorrhea in Women. A. G. Douglass, Birmingham.
83 Personal Impressions of a Visitor to the International Congress on Tuberculosis. C. B. Jackson, Dora.
84 Medical Treatment of Gallstones. H. E. Mitchell, Birmingham.
85 *Diagnosis and Medical Treatment of Gastric Ulcer. J. E. Dedman, Birmingham.
86 Diagnosis, Prognosis and Treatment of Tuberculous Joints. I. J. Sellars, Birmingham.

80 and 85. Abstracted in THE JOURNAL, May 16, 1908, pp. 1634, 1635.

New Orleans Medical and Surgical Journal.

October.

87 Intestinal Myiasis. W. D. Deaderick, Marianna, Ark.
88 *Moral Aspects of Race Suicide and Criminal Abortion. Rev. A. Biever, New Orleans.
89 Medical Aspect of Criminal Abortion. P. Michinard, New Orleans.
90 Pediatrics in the Chicago Hospitals and Dispensaries. L. R. DeBuys, New Orleans.
91 *The Female Bladder. L. Perrilliat, New Orleans.
92 *Shall the Average Country Practitioner Testify Before Our Juries as an Expert? H. L. Ballowe, Boras.
93 Trachoma: Symptoms, Cause and Differential Diagnosis. R. W. Salter, New Orleans.
94 The Nasal Treatment of Spasmodic Asthma. G. King, New Orleans.
95 Diodin in Diseases of the Eye. E. A. Robin, New Orleans.

88. Criminal Abortion.—Rev. A. Biever explains and defends the position of the Catholic church, which prohibits the production of abortion under any circumstances whatever, even to save the life of the mother. In reply to the argument that, of two evils the lesser should be chosen, he replies that if the choice were between evils in the same order, then of course it would be lawful to choose the less. But the choice is between a physical and a moral evil, and it is not right to do a moral wrong for the purpose of hindering a physical evil. While life may be taken in self-defense against an unjust aggressor, even in self-defense it may not be taken against an innocent person, and this the fetus undoubtedly is. Further, he adds that if it is once granted that grave reasons may justify abortion, it will be found difficult to draw the line, and, he asks, Will the doctor who has destroyed fetal life on occasions when he deemed it legitimate practice, have the courage to resist on all other occasions?

91. The Female Bladder.—Perrilliat points out that if less attention has been paid by the gynecologist to the female bladder than has been paid by the genitourinary specialist to the male bladder, it is because the separation of the genital from the urinary tract in the female has made it less vulnerable and easier of recovery. On the other hand, its close anatomic relation with other organs and its peculiar relation with the pelvic floor, render it liable to injuries from parturition. He describes the anatomy and its bearing on certain conditions of the bladder, and points out that the domestic habits of womankind are such as to encourage habitual overdistension, and to predispose the organ to disease or derangement. The recumbent posture results in diminished pressure and is of great value in the treatment of diseases of the bladder. He points out the anatomic reasons for the importance of always emptying the bladder before making a manual exploration of the uterus or adnexa. In determining in a given case the association of pelvic disease with bladder irritability, the cystoscope is of inestimable value. Statistics show the association of the two conditions in nearly 70 per cent. of the cases. He insists on the importance of a vesical exploration in every case of a more than transient nature, and asserts that no harm can possibly follow the proper use of the cystoscope.

92. Country Practitioners as Medicolegal Experts.—Ballowe asserts that the average country practitioner is not fit to pose as an expert when the life and liberty of an accused person is at stake. Medical jurisprudence occupies but little attention in college teaching, and a graduate therefore is not fit to pose as an expert, unless by his own subsequent industry and experience he has acquired the requisite knowledge. This, save in a few individual instances, he rarely does, and Ballowe urges the country practitioner to accept no calls to give medical testimony unless he is thoroughly prepared to give it properly with the scant protection afforded by the court. It is a most pitiful sight to witness an incompetent or unprepared medical witness on the stand, being mercilessly flayed by a clever and skillful lawyer.

Archives of Pediatrics, New York.

October.

96 *Epidemic Cerebrospinal Fever: Its Clinical and Pathologic Phases. B. F. Royer, Philadelphia.
97 *Lumbar Puncture: Its Technic and the Value of Cytodiagnosis in Differentiating Tuberculous Meningitis from the Epidemic Variety. E. Burvill-Holmes, Philadelphia.
98 *An Analysis of Four Hundred Cases of Epidemic Meningitis Treated with Antimeningitis Serum. S. Flexner and J. W. Jobling, New York.
99 *Serum Treatment of Meningococcic Meningitis. F. S. Churchill, Chicago.
100 *Serum Treatment of Epidemic Cerebrospinal Meningitis, Based on a Series of Forty Consecutive Cases. C. H. Dunn, Boston.
101 *Hydrocephalus of Meningococcus Origin, with a Summary of Recent Cases of Meningitis Treated by Antimeningococcus Serum. J. H. Knox and F. J. Bladen, Baltimore.

96. Epidemic Cerebrospinal Fever.—This article is a descriptive account of the history, causation, pathology, histology, course and symptomatology, diagnosis, complications and treatment of this disease accompanied by a number of characteristic illustrations. Royer adds to his pessimistic view of the treatment a postscript in a much more hopeful tone based on the recent treatment of seventeen patients with Flexner's serum with only seven deaths.

97. Lumbar Puncture.—Burvill-Holmes describes the technic of the operation, contrasts the normal and pathologic spinal fluids, and discusses the value of cytodiagnosis in differentiating tuberculous meningitis from the epidemic variety. He believes that in cases of doubt, or when meningococcus on the one hand and the tubercle bacillus on the other can not be demonstrated, a cytologic estimation is of great advantage and should be made, particularly when we have at our command an operation so easy of performance and practically so free from danger, if the ordinary precautions are taken, as is lumbar puncture.

98. Abstracted in THE JOURNAL, July 4, 1908, p. 65.

99. Meningococcic Meningitis.—Churchill believes that with our present knowledge of Flexner's serum, it is our duty, given a case of meningitis, to do lumbar puncture, and if we obtain a cloudy fluid to inject the serum at once into the spinal canal, subsequent injections being determined by the results of the bacteriologic examination of the fluid. If this shows the presence of the meningococcus, the serum should be repeated every day for three or four days if necessary. If relapses occur, we should resort to the serum again.

100, 101. Abstracted in THE JOURNAL, July 4, 1908, pp. 65, 66.

Journal of the Indiana State Medical Association, Fort Wayne.

October.

102 Surgical Treatment of Exophthalmic Goiter. J. V. Reed, Indianapolis.
103 Diagnosis and Treatment of Sinus Thrombosis. J. F. Barnhill, Indianapolis.
104 Prevention of Venereal Diseases. G. Link, Indianapolis.
105 Gonorrheal Ophthalmia. W. N. Sharp, Indianapolis.

American Journal of Surgery, New York.

October.

106 Acute Perforating Gastric and Duodenal Ulcer. E. Eliot, Jr., New York.
107 Management of Hernia. J. Wiener, New York.
108 An Arrangement for Observing Operations. A. M. Lesser, New York.
109 Three Interesting Cases of Sinusitis Associated with Serious Eye Complications. A. Wiener, New York.
110 Practical Points in Anesthesia. F. E. Neef, New York.
111 Cholecystectomy. W. P. Lang, New Haven, Conn.
112 An Easily Constructed Sling for the Application of the Plaster Jacket. S. Epstein, New York.

Southern California Practitioner, Los Angeles.

October.

113 The Medical Profession. Rev. J. S. Glass, Los Angeles.
114 Inauguration of the 24th Annual Session of the College of Medicine of the University of Southern California. G. MacGowan, Los Angeles.
115 The Old-Time Doctor. E. B. Ketcherside, Yuma, Ariz.
116 Case of Osteitis Deformans (Paget). H. Herbert, Los Angeles.
117 Light. P. H. Sumde, Los Angeles.
118 Vital Statistics—Their Importance and the Means of Securing Them. E. S. Godfrey, Bisbee, Ariz.
119 Treatment of Gonorrhea in Females. A. J. Downs, Los Angeles.
120 Complications of Rubeola, Rubella and Scarlet Fever. E. Sweet, Los Angeles.

Journal of Advanced Therapeutics, Rahway, N. J.

October.

121 Advancement of the American Electro-Therapeutic Association. H. F. Pitcher, Haverhill, Mass.
122 Practical Experience with an Alternating Current Rectifier. F. Patterson, Sioux Falls, S. D.
123 Cancer and Its Treatment by Cataphoric Sterilization. G. B. Massey, Philadelphia.

Atlanta Journal-Record of Medicine.

October.

124 Quacks. M. A. Clark, Macon, Ga.
125 Exploratory Puncture of the Drum Membrane in Certain Diseases of the Middle Ear. D. Roy, Atlanta.
126 Treatment of the Morphin Habit in General Practice. G. H. Lehmann, Augusta, Ga.
127 Conservatism in Railway Surgery. W. P. Whittington, Asheville, N. C.
128 Empyema: Etiology, Symptoms, Treatment and When to Perform Thoracotomy. J. T. Burrus, High Point, N. C.
129 Report of a Case of Tropical Ulcer. W. E. Wilmerding, Atlanta.

Journal of the Oklahoma State Medical Association, Guthrie.

October.

130 Value of the X-Ray to the Surgeon, Its Use in Diagnosis and Treatment. E. S. Lain, Oklahoma City.
131 Necessity of the General Practitioner Knowing When an Operation Should Be Done, and of the Surgeon Being Conservative as to Operation. J. L. Shuler, Durant.
132 Preliminary Treatment, Care of the Wound, and After-Treatment of Laparotomies. L. H. Huffman, Hobart, Okla.
133 Appendicitis, with Special Consideration of Its Varied Pathology and Treatment. V. Berry, Wetumka, Okla.

Detroit Medical Journal.

October.

134 Serum Diagnosis of Syphilis. H. R. Varney, Detroit.
135 Why Adenoids and Diseased Tonsils Should Be Removed. S. Conover, Flint, Mich.

St. Louis Medical Review.

October.

136 Diabetes Mellitus. T. N. Bogart, Excelsior Springs, Mo.
137 Infections of the Knee Joint and Treatment. W. C. G. Kirchner, St. Louis.
138 Malpractice, from the Doctor's Standpoint. J. Ashley, Bloomfield, Mo.
139 Heredity, Disease and Death. D. L. Field, Jeffersonville, Ind.

Cleveland Medical Journal.

October.

140 Mechanics of Lateral Curvature. H. O. Feiss, Cleveland.
141 Medical Progress in the Orient. I. Ludlow, Cleveland.
142 European Eye Clinics. L. Wolfenstein, Cleveland.

Journal of Cutaneous Diseases, New York.

October.

143 Lymphangioma Tuberosum Multiplex. M. L. Heidingsfeld, Cincinnati.
144 Osteoma Cutis. S. Taylor and R. W. Mackenna, Liverpool, Eng.
145 Treatment of Elephantiasis with the X-Rays. W. B. Adams, Beirut, Syria.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

October 24.

1 Heredity in Relation to Disease. J. A. Ormerod.
2 *The Limits of Knowledge. G. A. Gibson.
3 Sanitation in India. Sir J. P. Hewett.
4 Case in which Nine Confinements were Terminated Variously. A. H. N. Lewers.
5 *Points About Puncture of the Brain. H. Tillmanns.
6 Six Hundred and Seventy-Nine Operations Performed Under Spinal Anesthesia (Cocain or Stovain) by Tuffier's Method Dr. Sabadini, Algiers, Africa.

2. Published in the *Montreal Medical Journal*, Oct., 1908.

5. **Puncture of Brain.**—Tillmanns says that puncture of the brain is indicated as a diagnostic in all cases when the diagnosis is uncertain. When injury or disease of cranial cavity or brain is evident, trephining is required. Therapeutic puncture is practiced for hydrocephalus, dropsy of ventricles and for injections. Tetanus antitoxin cranial injection has been rightly abandoned for subcutaneous or intravenous injection or into the spinal cord or nerves. For instance, in wounds to the hand, where tetanus is expected, Tillmanns recommends immediate injection into the exposed brachial plexus endoneurally. He describes the technic of aseptic puncture of the brain. As to site, he recommends puncture from above, through the frontal bone about 2 cm. from the central line and 3 cm. from the precentral fissure. The hollow needle must be pushed downward and backward, striking the ventricle at a depth of 5 to 6 cm. A ring or shield fitted to drainage tube will avoid going deep enough to injure the opposite wall. Subcutaneous drainage is most advantageous. The ventricle may also be punctured from behind from the occipital lobe. The posterior cornu is met with at a depth of 3 cm. if cranium is opened 4 cm. over protuberantia externa and 3 cm. to side of central line of skull. Direction should be forward and slightly upward.

British Medical Journal, London.

October 24.

7 Examination and Certification of Mental Patients. J. Nell.
8 *Cats as Plague Preventers. A. Buchanan.
9 Implantation of the Ureters Into the Rectum for Extroversion of the Bladder in a Woman, by a Modified Peter's Operation. R. L. Knaggs.
10 *Brewis's Appliance for Use After Colotomy. J. Ingram.
11 Tropical Abscess of the Liver. S. R. H. Charles.
12 *Dysentery with Intestinal Amebas, but Without Hepatic Abscess. A. R. S. Anderson.
13 *Intestinal Amebiasis. C. M. Wenyon.
14 *Amebic Abscess of the Liver as an Easily Preventable Disease, and Postoperative Sepsis as an Important Lethal Factor. L. Rogers.
15 *Is Dysentery the Sole Cause of the Tropical Liver Abscess? K. C. Bose.
16 Treatment of Abscess of the Liver by Aspiration and Injection of Quinin. A. Hooton.
17 Dysenteric Amebas and Liver Abscess. E. Marchoux.
18 *Mycosis Fungoides. A. Garceau.
19 *Treatment of Lupus Vulgaris by Unmodified Sun Rays. J. G. Tomkinson.
20 *Treatment of Lupus Vulgaris. G. H. Lancashire.
21 Treatment of Hypertrichosis by the X-Rays. H. Noiré.
22 Bullous Eruptions in Children. J. L. Bunch.
23 Diseases of Domesticated Animals Communicable to Man. L. Roberts.
24 *Occupation Dermatitis. F. Gardiner.
25 Isolation of the Klebs-Loeffler Bacillus in Eczematous and Bullous Eruptions. A. Eddowes.
26 Experimental Urticaria. T. C. Glichrist.
27 The Intracranial Complications of Ear Disease. C. A. Ballance.
28 Id. A. L. Whitehead.
29 Nature and Treatment of Atrophic Rhinitis. J. Adams.

8. **Cats as Plague Preventers.**—Buchanan follows up a previous article to insist on the importance of the cat as the best of all plague preventers.

10. **Appliance for Colotomy.**—Ingram describes an ingenious apparatus invented by one of his patients on whom colotomy had been preformed. It consists essentially of a metal box with a flange that can be attached to a body plate. At its dependent part it has a chute, at the end of which is fixed a rubber bag. The inventor is a busy traveling man and always carries two or three with him.

12. **Amebic Abscess of the Liver.**—Anderson recapitulates as follows the four principal reasons for the belief that there exists such a disease as amebic abscess of the liver:

1. Cases of dysentery characterized by the presence of amebas in the stools frequently develop liver abscess.
2. Patients with liver abscess admitted to charitable hospitals are frequently associated with dysentery with amebas in the stools.
3. Amebas are found in the interior of abscesses of the liver.
4. The experimental injection of *Entamœba hystolytica* into the bowels of cats and puppies has in some cases produced dysentery and liver abscess.

He discusses each of these in detail in relation to the statistics of 920 cases of dysentery at Port Blair, of which more than half the patients harbored amebas in their stools. Abscess occurred in less than 0.1 of all cases of dysentery, or 0.2 per cent. of dysentery with intestinal amebiasis, from which he infers that amebas in the intestines and stools, in Port Blair, neither foretold nor caused abscess of liver. The statistics also show that abscess of the liver occurs in less than 1 per cent. of cases of dysentery. That amebas are found in the interior of abscesses of the liver is undeniable, but is a very weak argument that they cause the disease. Experimental injection of amebas by mouth and rectum failed in Anderson's hands, to produce liver abscess. He concludes, therefore, that *Entamœba histolytica* in Port Blair and Eastern Bengal, at any rate, is not the important factor in the causation of abscess of the liver.

13. **Intestinal Amebiasis.**—Wenyon summarizes his article as follows: There is an ameba which is to be found in the human intestine, both in health and in disease, which reproduces asexually in the intestine and sexually in cysts, and which contains two, four or eight nuclei, according to the stage of development. These cysts escape to the exterior and

transmit the infection to other hosts. This ameba is not peculiar to man. In order to determine whether the ameba found in the tissues in dysentery and allied disorders is the same or a different species, it is necessary to study the developmental process; this has been done by Schaudinn, with the result that he describes two distinct species; but his results need confirmation.

14. **Prevention of Amebic Abscess of Liver.**—Further experience of ipecacuanha in the presuppurative stages of amebic hepatitis, confirms Rogers' contention that tropical liver abscess can thus be easily prevented. Four-fifths of amebic liver abscesses are free from bacteria and cocci when first opened, or postmortem if previously unopened. In cases of tropical liver abscess proving fatal after the open operation, infection with staphylococci is almost invariably found. The great majority of patients examined at the time of being dressed subsequently to the drainage show a similar infection, which it is almost impossible to prevent in damp hot climates. Postmortem evidence shows that, in half the number of patients, being 50 per cent. of the total operated on dying subsequently to the abscess being opened, conditions are found which almost preclude hope of recovery. In the remaining half, single, or practically single, medium-sized abscesses are found, which afford good hope of recovery under improved methods of treatment. By means of a flexible sheathed trocar, liver abscesses may be drained and repeatedly irrigated with quinin solution without the admission of air, with probably better results than the present Calcutta mortality of about 60 per cent. The ipecacuanha treatment should always be used after operation for liver abscess, to cure any latent amebic dysentery and to prevent further abscess formation.

15. **Tropical Liver Abscess.**—Bose says that ipecac in large doses in the presuppurative stage is sometimes followed by excellent results. He points to the effect of the use of cannabis indica in deteriorating the resisting power of the liver, and rendering it more susceptible to inflammation and suppuration.

18. **Mycosis Fungoides.**—Garceau is of the opinion that until we are more clearly informed of the nature of this disease the treatment should be tentative, and he is also firmly convinced that attention to the nervous system, to the general health and hygienic measures, is largely influential, as well as local treatment, in producing general benefit. Specific therapeutics depends on the discovery of a special organism.

19. **Solar Therapy of Lupus Vulgaris.**—Tomkinson, from the history of a patient treated by daily exposure to the sun's rays at Helouan, Egypt, recommends that where sun and other climatic conditions are favorable a trial be made of this method.

20. **Lupus Vulgaris.**—In regard to the local treatment of this disease, Lancashire believes that if a purely caustic treatment is decided on, the best drug at our disposal is pyrogallol. It must be pushed and a strong preparation used. He finds the 40 per cent. plaster superior to the 30 per cent., which he formerly used.

24. **Occupation Dermatitis.**—Gardiner makes the following deductions, based on 187 cases of occupation dermatitis at the Royal Infirmary, Edinburgh:

1. Most patients are attacked either a week or two after going to work for the first time or not until they have been employed a number of years.
2. Seborrhea and hyperidrosis, or precedent skin disease, increase the liability to attack.
3. Attacks are more frequent in hot weather, heat being a predisposing agent, even if nothing more.
4. The eruption is often made worse by the use of "patent" remedies.
5. Soaps are the actual provocatives in many cases, and in others aggravate an existing dermatitis.
6. The arms, hands and face are most frequently affected.
7. Some disturbance of the general health may determine the onset of the dermatitis or lead to its extension.

Clinical Journal, London.

October 21.

30 Technic of Cancer Operations, with Reference to Danger of Cancer Infection. C. Ryall.
31 Prolapse of the Uterus. T. G. Stevens.
32 Case of Femoral Aneurism Treated by Excision of the Sac. C. H. Page.

Medical Press and Circular, London.

October 24.

33 Diseases of the Stomach. W. Calwell.
34 Insanity, Wit and Humor. R. Jones.
35 Pathology and Treatment of Exophthalmic Goiter. A. G. Gullan.

British Journal of Children's Diseases, London.

September.

36 Acute Contagious Pemphigus Occurring in Febrile Diseases. C. Leiner.
37 Tuberculosis of the Brain, with Complete Paralysis of Both Third Nerves. R. B. Ness.
38 Educative Aspect of Games. A. H. Gerrard.
39 *Diagnosis of Urinary Tuberculosis in Children. C. A. Leedham-Green.
40 Three Cases of Congenital Heart Disease. G. Carpenter.

39. **Urinary Tuberculosis in Children.**—Leedham-Green says that instead of regarding it as a relatively rare disease, which, when present, is difficult to alleviate and hopelessly incurable, we now know that urinary tuberculosis is exceedingly common, and when recognized early and the primary focus removed is of distinctly good prognosis. Systematic examination of urine will reveal tubercle bacilli in many unsuspected cases. If in doubt, the opsonic index and the ocular and cutaneous reactions should be resorted to. He notes the weak points of these tests, and says that the only reaction giving a clue to location of infection is that of subcutaneous injection of old tuberculin. He insists on the importance of cystoscopy for estimating involvement of the bladder, and says that it may be practiced in the youngest girl and in boys over 8 years. Chromocystoscopy—the injection of carmine blue subcutaneously, and observing its excretion through the cystoscope—is a valuable adjunct. Where numerous tubercle bacilli and transitory hematuria exist without indication of site of trouble, a good substitute for exploratory nephrotomy is to expose the ureter subperitoneally by a small incision in the abdominal semilunar line, open it by a small longitudinal cut, insert a fine urethral catheter, and collect the urine separately. A fine stitch closes the opening in the ureter, which is dropped back to place and the wound is drained for a day or two.

Journal of Tropical Medicine and Hygiene.

October 1.

41 *Heart Lesions Among the Natives of Sierra Leone. H. E. Arbuckle.

41. **Heart Lesions.**—Arbuckle, as the result of an examination of apparently healthy natives of both sexes in Sierra Leone, finds that in a country where the cause we are accustomed to regard as by far the most potent, namely, acute rheumatism, is certainly not operative, heart disease is, nevertheless, very prevalent. The most obvious deduction is, that even in countries where acute rheumatism is of such prevalence as to overshadow in importance the other competent causes of cardiac lesions, these latter should never be forgotten or neglected by the practitioner, in respect of prophylaxis, diagnosis or prognosis.

Bulletin de l'Académie de Médecine, Paris.

October 13, LXXII, No. 32, pp. 201-232.

42 *Treatment of Certain Puerperal Infections with a Continuous Current of Oxygen. P. Reynier.

42. **Continuous Oxygen Douche in Puerperal Infection.**—Reynier reports in detail four cases of severe anaërobic puerperal infection in which marked improvement followed the use of a current of oxygen allowed to flow continuously into the uterus, through a recurrent catheter. The gas is admitted very slowly, avoiding all pressure, and the catheter is left permanently in the uterus, connected by a tube as needed with the oxygen tank. In the first case reported, the patient was much prostrated, six days after her confinement, the temperature being 40 C. (104 F.), and the lacerated perineum and cervix were covered with diphtheroid false membranes. The uterus was rinsed out with hydrogen dioxid morning and evening, followed by an iodized injection, and this by the continuous oxygen treatment. The temperature dropped to normal for part of the next day, and in five days the patient was well on the road to recovery. The results in the other cases were equally convincing. This oxygen treatment has been used in Thiriar's service at Brussels for some years, and he has reported good results from it, as mentioned in these columns, Sept. 29, 1906, page 1059.

Presse Médicale, Paris.

October 14, XVI, No. 83, pp. 657-664.

43 *Evolution and Treatment of Tuberculosis in Syphilities. E. Sergent.

October 17, No. 84, pp. 665-672.

44 Rapid Radiography. P. Aubourg.

October 21, No. 85, pp. 673-680.

45 *The Ethereal Sulphates in the Urine in Gastrointestinal Autointoxication. (Les sulfo-éthers urinaires.) R. Brunon and M. Guerbet.

43. Association of Tuberculosis with Syphilis.—Sergent protests against the prevalent idea that this combination is exceptionally grave. On the contrary, specific treatment of the syphilis is liable to have a favorable influence on the tuberculous process. When a tuberculous individual contracts syphilis, the outlook is grave, but when a syphilitic develops tuberculosis, thorough mercurial treatment is liable to improve and even to cure the tuberculosis. Potassium iodid must be strictly avoided as it is liable to induce congestion and prove dangerous. The tuberculous and syphilitic processes may develop side by side without any reciprocal influence, and it is by no means exceptional to observe the tuberculous process assume an unusually mild fibrous form in these conditions. This is favored by treatment with lime, according to Ferrier, and general tonic measures. Sergent's research has shown that the lesions are never hybrid, but the syphilis may prepare the soil for tuberculous invasion.

45. The Ethereal Sulphates in Gastrointestinal Autointoxication.—Brunon and Guerbet, in previous articles, have called attention to the important information to be obtained from the study of the proportion between the ethereal sulphates and the total nitrogen in the urine. The details of fifteen cases are tabulated as observed during a long period. In every case as the signs of autointoxication diminished under dietetic measures, the quotient of the ethereal sulphates divided by the total nitrogen grew lower, and clinical improvement or complete cure followed—this train of events proceeding always in the same order. This quotient ranges between 1 and 1.4 per cent. in normal conditions, but in autointoxication it increases to 3 and in extreme cases to 6 or 7 per cent. The proportion of the sulphates may decline, while the total nitrogen remains high.

Revue de Chirurgie, Paris.

October, XXVIII, No. 19, pp. 563-598.

46 Amputation Above the Malleolus with Osteoplastic Operation on Calcaneum and Tibia. (Amputation sus-malléolaire: Procédé Guyon.) P. Duval.

47 Affections of Bones and Joints Causing Hypertrophy, of Tuberculous Origin, in Man and in the Dog. (Ostéo-arthropathies hypertrophiantes d'origine tuberculeuse.) V. Ball and H. Alamartine.

48 Rational Treatment of Congenital Luxation of the Hip Joint. What Attitude Is Best Adapted to Counteract Rotation? (Luxation congénitale de la hanche.) P. Le Damany.

Semaine Médicale, Paris.

October 21, XXVIII, No. 43, pp. 505-516.

49 *Paravertebral Triangle of Dulness: Grocco's Sign. (Du triangle de matité paravertebrale et son peu de valeur séméiologique chez l'adulte.) M. Roch and R. Dufour.

49. Diagnostic Unreliability of Paravertebral Triangle of Dulness.—Roch and Dufour express amazement that those who have written on the subject of Grocco's sign never seem to have examined for it in physiologic conditions. They state that it is an ordinary physiologic phenomenon with no diagnostic or differential value. The resonance along the spine is normally reduced because of the presence in this locality of the peculiarly thick dorsal muscles filling what they call the costovertebral groove. The soft parts are 1 cm. thick at the fifth dorsal vertebra; 2 cm. thick at the seventh; 3 cm. at the ninth and 3.5 cm. at the eleventh, measured just outside the spinous processes. An inch beyond they grow much thinner. This is the cause of the dulness observed, they say, and in pathologic conditions it is merely concealed by the pathologic condition on the diseased side, but its persistence on the sound side has no differential importance—it can be found just the same in the healthy. The above remarks apply exclusively to adults; the authors have not studied the sign on children.

Beiträge zur klinischen Chirurgie, Tübingen.

September, LIX, No. 3, pp. 475-811.

50 *Simplified Operation for Umbilical Hernia. (Vereinfachtes Operationsverfahren des Nabelbruches.) A. Ebner.

51 Total Luxation of Metatarsus in Lisfranc's Joint. (Dorsolaterale Luxation.) E. D. Schumacher.

52 Incomplete Laceration-Fracture of the Tubercle of the Tibia or Defective Growth? (Unvollständige Abrissfrakturen der Tuberositas tibiæ oder Wachstumsanomalien?) C. Schlatter.

53 Displacement of Appendix Simulating Appendicitis. (Eine Lageveränderung des Wurmfortsatzes, welche Appendicitis vortäuschen kann.) P. Janssen.

54 *Surgery of the Stomach. (Magenchirurgie.) R. Stumpf.

55 Results of Treatment of Appendicitis at Münsterling, 1900-1907. E. Rar.

56 *Transplantation of Periosteum in Bony Ankyloses of Joint. (Weitere Untersuchungen und Erfahrungen über Periosttransplantation bei Behandlung knocherner Gelenkankylosen.) E. M. Hofmann.

57 *Clinical and Experimental Study of Hyperemic Treatment. (Beiträge zur Bier'schen Stauung.) E. v. Graff.

50. Operation for Umbilical Hernia.—An illustrated description is given of Lexer's technic. After resection of the sac, a purse-string suture is taken through all the soft parts around, below the skin. The hernial opening is then sutured, after which the purse-string suture is drawn up and tied. The aponeuroses of the rectus muscles are then sutured above and below the purse-string suture, after which the skin is sutured. This technic excludes the possibility of infection, and reduces the liability to hemorrhage, owing to the minimal area of the wound, while the entire operation can be completed in a very few minutes—possibly under local anesthesia alone.

54. Surgery of the Stomach.—Janssen reviews the experiences with operations on the stomach at Witzel's clinic at Düsseldorf, 1903-1907: There were 49 cases of cancer, with operative treatment in 44, and 37 operative cases of non-malignant stomach affections. This material is analyzed in detail and the final outcome compared with the reports from other clinics. Loss of weight proved an important aid in the diagnosis of cancer in the dubious cases; if the weight continues to decline, exploratory laparotomy should be advised, even if the other symptoms are vague. Stumpf advises resection, as the results are better with this, even as a merely palliative operation, than from gastroenterostomy alone, and the mortality of 9.5 per cent. is so low that it should not turn the scale against it. Gastroenterostomy is liable to give good results with a slow growing cancer, but with the rapidly growing neoplasms, gastroenterostomy or jejunostomy merely relieves the patient without lengthening life. Carcinomas which have caused symptoms for a considerable time before operation often give better permanent results than those which necessitate operation early. The latter generally belong to the extra malignant, rapidly growing cancers. In the cases of perforation of an ulcer in the stomach or duodenum, 50 per cent. of the patients operated on were cured. Excision of the ulcer in the simple cases, supplemented by gastroenterostomy, gave good permanent results, as also resection in the cases of non-malignant stenosis of the pylorus. Gastroenterostomy plus a plastic operation on the pylorus failed in 33 per cent. of the cases of benign stenosis of the pylorus.

56. Transplantation of Periosteum in Treatment of Bony Ankylosis.—Hofmann states that the functional results are still good in the case he reported in 1906, in which bony ankylosis of the elbow was cured by chiseling the joint to its original shape and then covering the cut surfaces with a flap of periosteum taken from the patient's own tibia. He has since undertaken experimental research to determine whether the implanted periosteum retains its specific properties and whether this does not contribute to the excellent outcome. He has also applied the same treatment in four additional cases of bony ankylosis, and this experience has demonstrated, he says, that the implanted periosteum serves to prevent further development of ankylosis and of osteophytes, the periosteum providing the natural barrier for bone growth, thus interposing the one effectual obstacle to formation of callus and the growing together of the bones. It also seems to promote the adaptation of the new joint surfaces to the functional demands—in short, the periosteum seems to be the main factor in the restoration of normal function in the joint. The best results were obtained in the cases with comparatively

little cicatricial change in the capsule and tissues around the joint. The anterior surface of the tibia seems to be the best location for taking the flap of periosteum, care being observed in cutting it to retain the osteoblast layer intact. The tibia does not suffer by its removal, and the flap never became necrotic in any of his tests or clinical experiences. In each case, the joint was immobilized in a cast for several weeks, after which active and passive exercises were begun, the patient being urged to use the arm naturally as much as possible, and thus gradually to ensure complete restoration of function.

57. **Experimental Hyperemic Treatment.**—Graff devotes nearly a hundred pages to description of extensive experimental research with constriction and suction hyperemia at Innsbruck. Among the other results reported are that a fatal dose of strychnin could be injected into the limb of the animal below the constricting band, without injury, and that absorption of diphtheria and tetanus toxin was much delayed, but the toxin finally proved fatal. The serum accumulating below the constricting band on a human limb does not seem to contain any bactericidal substances effectual against staphylococci and streptococci, but the serum from rabbits, under the same conditions, has a marked stimulating action on phagocytosis, reducing the number of germs to less than one-fourth per thousand. He thinks that this stimulation of phagocytosis is the secret of the benefit of hyperemic treatment.

Berliner klinische Wochenschrift.

October 12, XLV, No. 41, pp. 1833-1872.

58 Diffusely Disseminated Cutaneous Syphilids in Monkeys After Inoculation in the Testicles. (Hautsyphilide bei niederen Affen nach Impfung in den Hoden.) E. Hoffmann.
59 *Serotherapy of Chronic Nephritis. (Versuch die chronische Nierenentzündung serotherapeutisch zu beeinflussen.) L. Casper and C. S. Engel.
60 *Pneumococcus in the Blood in Pulmonary Tuberculosis. (Der Pneumococcus Fraenkel im Blut bei Lungentuberkulose.) L. Panichi.
61 *Diabetic Lipoidemia. C. Fragoni and G. Marchetti.
62 Kurloff's Bodies in Mononuclears of Guinea-pig Blood and Their Protozoic Nature. (Kurloff'sche Körper in Mononukleären des Meerschweinchenblutes.) V. Patella.
63 *Virus of "Three-day Fever." R. Doerr.
64 The Question of Specialists. (Zur Spezialistenfrage.) H. Kohn.
65 Tendon Transplantation. (Sehnentransplantation.) A. Hildebrandt.

October 19, No. 42, pp. 1873-1916.

66 Fatal Inflammation of the Lungs from Inhalation of Ammonia. (Tödliche Lungenentzündung durch eingeatmetes Ammoniakgas.) L. Lewin.
67 *Treatment of Scarlet Fever. (Einige Beobachtungen bei Scharlachepidemien.) Rubens.
68 Serum Reaction in Scarlet Fever. (Die Wassermannsche Reaktion bei Scharlach.) J. Zeisler.
69 Origin of Glaucoma. G. Levinsohn.
70 *Etiology and Treatment of Pernicious Anemia. E. Reicher. (Commenced in No. 41).

59. **Attempt to Influence Chronic Nephritis by Serotherapy.**—Casper and Engel describe in detail the treatment with serotherapy of eleven patients with chronic nephritis. The results proved that their technic is harmless, and that the general health of the patients showed marked improvement during the serum treatment, while the edema visibly subsided. In one case, the elimination of albumin and tube casts ceased entirely, while in others the amount only was reduced, and in a few no change was observed. They explain these variable results as due to the fact that the serotherapy is unable to restore to normal the already injured elements in the kidneys, but it keeps the functionally intact organs in good condition, and protects them against further ravages of the disease. The nephritis was in a pronounced form in all the patients thus treated. The curative serum was derived from a rabbit that was injected once or twice a week, for eight or ten times, with from 25 to 30 c.c. of serum obtained from 50 or 60 c.c. of the patient's own blood, set aside to clot. The serum was heated several times to 58 C. (136 F.) before being injected into the rabbit, and a separate rabbit was used for each patient. Blood was then drawn from the rabbit and the serum was mixed with 0.5 per cent. carbolic acid and injected into the patient in small amounts repeatedly. After the patient ceased to respond with a reaction to this rabbit serum, normal human or animal serum was used. Besides the specific antibodies generated in the rabbit in response to injection of the patient's own serum, the course of treatment is thus completed by supplying normal complement in serum from a healthy human or animal. The premises on which this method of treatment is based are described at length.

60. **Pneumococcus in Blood in Pulmonary Tuberculosis.**—Panichi reports that the pneumococcus was found circulating in the blood in four out of thirty tuberculous adults, without giving rise to any disturbances, apparently entirely latent. There was no history of pneumonia in any instance.

61. **Diabetic Lipoidemia.**—This communication from Grocco's clinic at Florence describes a case of diabetes in a boy of 13 whose blood contained excessive proportions of fat. The cerebrospinal fluid was opaque and milky and the blood also opaque and whitish, while the urine contained 35 gm. of fat in the twenty-four hours. The child succumbed in coma in the fifth month of the disease. The blood drawn during life contained in 100 gm. of ether extract, 94.170 parts total fat; 3,938 parts cholesterin, and 1,892 parts lecithin in 100,000 parts.

63. **Invisible Virus of "Three-Day Fever."**—Doerr is inclined to believe that the brief febrile affections known as dengue, summer fever, Shanghai fever, or by similar local terms, are in reality all of the same nature. In lower Austria such a sickness is prevalent during certain seasons. On account of the extreme collapse and depression it is popularly called "dog sickness," and is officially known as "endemic catarrh of the stomach." The syndrome is much like that of dengue. The government sent a commission in charge of Doerr to study the disease and means of prevention, and he has succeeded in tracing it to a virus which is transmitted by a gnat, the *Phlebotomus papatasii*, a small blood-sucking insect. The virus is in the patient's blood during the first day of fever but vanishes from the blood early. After the insect takes up the virus a week or so has to elapse before it can transmit the disease. Doerr infected a number of the gnats and by keeping them alive in large cages of fine organdy muslin, was able to infect three or four medical volunteers, even when the gnats were carried to Vienna from Herzegovina. He also infected four out of eight young soldiers who submitted to the test, the gnats being carried from the endemic spot to a region where the disease was never known to occur except as imported. Grassi published last year a work on these insects. The prevalence of the "three-day fever" corresponds with what is known of the localization and seasons of the phlebotomus.

67. **Scarlet Fever.**—Rubens has noticed that the severity of the sore throat, in every case of scarlet fever in his experience, invariably was proportional to the severity of the disease and the gravity of the prognosis, especially in regard to the complications. He has found that by keeping the process in the throat under control it is possible to attenuate the infection and ward off complications. Direct local applications with a brush are liable to be too superficial to do any good, or, if applied vigorously, may abrade the surface and open new portals for infection. Gargling is also too superficial in its effects, and it is difficult to get children to rinse out their mouths effectually with an antiseptic mouth wash. He has derived the greatest benefit from direct insufflation, through a straight tube, of a mixture of equal parts of sodium sozoiodolate and sulphur. It is necessary to repeat this insufflation every hour, day and night, to have it do any good, and he insists on this when he sees that the throat process is assuming a progressive character. He continues this local application until the ulcerations are circumscribed and the mucus production has ceased. As the throat process becomes attenuated under the influence of this local treatment, the general symptoms subside, and he has never had otitis develop or phlegmon in the maxillary glands under it. In a few instances otitis developed a week later, but this, he states, must have been from infection by way of the blood, and the otitis was always mild and rapidly subsided after paracentesis. The kidney complications must be warded off by strict dietetic measures, avoidance of all nitrogenous foods and alcohol, and reliance on milk as the main article of diet. During a very tempestuous onset of the infection, when there is danger of heart failure, he sometimes gives large doses of alcohol to tide the patient

past this crisis, but after this he forbids alcohol in any form. He keeps his patients in bed for four weeks. His careful examination of long series of scarlet fever patients has failed to reveal the diphtheria bacillus in the throat in any instance.

70. **Origin and Treatment of Pernicious Anemia.**—Reicher's communication issues from Kraus' medical clinic at Berlin, and describes a method of treating pernicious anemia based partly on the discovery of a hemolysin in the blood in this affection and partly on theoretical reasoning and laboratory experiments, as he describes in detail. His assumption is that the cholesterin in the body has the physiologic function of binding a complex hemolysin which is found in the blood normally. Lack of the cholesterin would naturally be followed by the accumulation of the hemolysin unrestrained, and this would be followed by hemolytic destruction of the blood, such as is observed in pernicious anemia. A 3 per cent. solution of cholesterin in olive oil (prepared with heat) neutralizes the hemolysin in the test tube and in experimental research, and it has given promising results in the clinic. He flavors it with a few drops of peppermint, and has the patients take about 100 gm. (a little over 3 fluidounces) every day. The mixture was taken readily by the patients, and the effect was very good in three of the four cases reported. The first patient was a woman of 40, and the stormy onset of the severe pernicious anemia was accompanied by dyspnea, ascites, pleural effusion and edema; reds, 750,000, and hemoglobin, 18 per cent. After the cholesterin had been taken for one week, the reds had increased to 1,750,000 and the hemoglobin to 30 per cent., and in the course of three more weeks to 50 per cent., while the other symptoms had disappeared, and the patient had increased in weight, although the spleen was still palpable. The cholesterin was kept up for seven and a half weeks, after which arsenic was given. The improvement lasted for some months, when the anemia syndrome recurred and proved fatal. In another case marked improvement was obtained, the reds increasing from 1,000,000 to 2,300,000, and the hemoglobin from 20 to 40 per cent.; in still another from 3,000,000 to the normal figure and the hemoglobin from 30 to 40 per cent. In the fourth case no benefit was apparent from the cholesterin, but a preparation of arsenic gave good results. He urges others to try this cholesterin oil in cases of pernicious anemia and possibly also of paroxysmal hemoglobinuria and eclampsia. In a certain proportion of such cases the cholesterin may respond to the causal indications, as the trouble may be the result of a lack of this substance in the organism and consequently loss of one of its most potent defensive factors. The literature on the subject is reviewed in detail, especially Kyes' research on the hemolytic prolecithid of cobra venom and the corresponding toxolecithid —both of which are bound by cholesterin, while animals can be rendered immune to the cobra lecithid by preliminary treatment with cholesterin.

Correspondenz-Blatt für schweizer Aerzte, Basle.

August 15, XXXVIII, No. 16, pp. 513-552.

71 *Bitemporal Hemianopsia After Subsidence of Epilepsy. A. Vogt.

72 Radium and Radioactivity. E. Sommer.

September 1, No. 17, pp. 553-584.

73 *Epidemic of Ringworm at St. Gallen. (Mikrosporie-Epidemie.) R. Zollikofer and O. Wenner.

September 15, No. 18, pp. 585-616.

74 *Occurrence and Treatment of Scarlatinal Otitis. (Scharlachotitis.) F. R. Nager.

75 The New Swiss Pharmacopeia and the Physician. A. Tachirch.

October 1, No. 19, pp. 617-648.

76 *Extraction of the Arms by Mueller's Technic. (Zur Armlösung nach A. Mueller.) R. v. Fellenberg.

77 *Endemic Typhoid from Bacilli Carrier. (Typhusendemie ausgegangen von einer vor 31 Jahren an Typhus abdom. erkrankten Bacillenträgerin.) E. Huggenberg.

October 15, No. 20, pp. 649-680.

78 *Laws Regulating Development of Secondary Affections with Apical Tuberculosis. (Das gesetzmässige Auftreten von Secundar-Erkrankungen bei Spitzentuberkulose.) Huguenin. Commenced in No. 18.

79 *The Viscosity of the Blood. (Viscosität des Blutes.) F. Blumschy.

71. **Bitemporal Hemianopsia Succeeding to Epilepsy.**—Vogt reports a case of typical bitemporal hemianopsia discovered after eight years of some impairment of vision. The patient was a woman of 48, who between her twenty-third and thirty-sixth year had suffered from severe epileptic seizures but had had none since then. The symptoms indicate the existence of a tumor compressing the center of the optic commissure, perhaps enlargement of the hypophysis or some other lesion in the vicinity of the sella turcica. This lesion was probably responsible for the epilepsy, as also for the vertigo and headache still observed at times.

73. **Epidemic of Ringworm and Its Control.**—When the epidemic of ringworm was discovered a central office was opened for free examination and treatment, and 243 suspicious cases were examined, with positive findings in 45. Before the intended Roentgen equipment for treatment was installed, it was found that the affection differed from the ordinary type; the scalp was inflamed, there were efflorescences on the skin in 32 of the 45 cases, and one-fifth of the patients were adults. The cases seemed to be grouped by houses rather than by contact in the school and the affection was distinguished further by its comparatively ready curability. These features differentiated the affection from ordinary ringworm, confirmed by the discovery of the *Microsporon lanosum*. This parasite infests the domestic animals as well as man, while the microsporon of ordinary ringworm is confined to man. It was found that cats were the sources of contagion in a number of instances. In one family the cat was first affected and was killed, then various members of the family became affected, and finally a recently imported cat contracted the affection from them. The public was warned of the danger of contagion from cats; no other domestic animals showed signs of any affection of the kind. The main point in treatment is the removal of the hair over the affected area, and this it was found could be accomplished by keeping the region constantly moist, the infected hairs readily dropping out under the effect of the maceration, while the sound hairs did not seem to be affected by it to any extent. The parts were shaved and then a mild antiseptic paste or salve applied or a moist dressing with a 5 per cent. soda solution, covered with oiled silk or rubber to keep in the moisture. A cure was obtained in three or four weeks in some cases, while others required as many months, the average being seventy days. The brothers and sisters of those affected were kept out of school for two weeks.

74. **Scarlatinal Otitis.**—Nager has studied the statistics in regard to scarlet fever in the Basle canton since 1876. The figures show that scarlet fever is of a less severe type of late years, the mortality having dropped from 13.6 per cent. in 1876 to 1.9 per cent. of 1,335 cases, 1900-1905. Examination of 750 patients in the scarlet fever isolation hospital showed otitis in 22.8 per cent., although the affection was latent in some. Otitis media was found in 6.5 per cent. of all the cases. Acute catarrhal inflammation of the ear without perforation, developing early in the disease, always subsided, leaving no traces. In 2 cases the scarlatinal otitis destroyed both the labyrinth and vestibular apparatus. Children with adenoid vegetations seem peculiarly predisposed to severe scarlatinal otitis, even when the vegetations have been removed. There seems to be some special favoring factor in the conditions that accompany adenoid vegetations, probably some constitutional anomaly. In one family six children presented the severe form of scarlatinal infection, and two succumbed. It is impossible to prevent the spread of the exanthem or enanthem, but it is important to keep the nose and throat clean and disinfected, for which adrenalin is useful, followed by spraying with a 0.5 per cent. solution of hydrogen dioxid or a boric-acid solution, concluding with an oil spray. These measures repeated several times a day will keep the passages open and prevent stagnation of secretions.

76. **Extraction of the Arms According to Mueller's Technic.**—The principle of this technic for management of breech presentation is that by drawing one shoulder down lower than the other and working it through the pelvis the arm follows of itself. Instead of drawing the child vertically downward, as with the Deventer technic, when the shoulders are reached, the trunk of the child is drawn to one side which releases one

shoulder, which then appears at the vulva. Drawing the child by the feet in the opposite direction then releases the other shoulder, and the shoulders are thus delivered as with a vertex presentation. The aftercoming arms reduce the diameter between the tips of the shoulders and facilitate the maneuver better than when the arms are crossed on the chest. In extremely difficult labor with contracted pelvis, Mueller advises exerting forcible traction downward and then to one side, even if the child's clavicle snaps. This brings the shoulder past the brim and the clavicle may prove elastic enough to yield. There has been considerable discussion of late in regard to this Mueller technic, but Fellenberg's experience in two difficult cases was so favorable that he commends it in high terms.

77. **Typhoid Endemic from Bacilli Carrier.**—Huggenberg states that thirteen cases of typhoid occurred in a single family at different intervals in the course of thirty-one years, none with any apparent connection with typhoid epidemic or sporadic in the neighborhood, and notwithstanding the most scrupulous measures for disinfection and cleanliness and changes of residence of the family. Recent examinations have disclosed, however, that the mother, the first member of the family to have typhoid, thirty-one years before, still eliminates considerable numbers of typhoid bacilli in the stools, although apparently in perfect health. She was advised to disinfect her stools and urine for twenty-four hours before turning them into the drain, and to soak her bed and body linen also in a disinfectant solution before sending it to the laundry. She was also advised to keep away from the kitchen as much as possible, and to wash her hands frequently with a disinfectant solution.

78. **Laws Regulating Development of Secondary Affections with Apical Tuberculosis.**—Huguenin discusses the participation of the nerves, muscles, etc., in the cough and in aspiration of substances from diseased parts of the lung, showing how the development of secondary affections proceeds according to certain physical laws.

79. **Viscosity of the Blood.**—Blunschy has made a comparative study of the conditions in regard to the viscosity of the blood in 72 healthy and 52 sick persons under various conditions. Muscular exertion reduces the viscosity when severe and long continued, but increases it when mild and comparatively brief, even when there is much perspiration in both conditions. On the other hand, even very slight exertion in persons with cardiovascular or respiratory affections increases the viscosity. He ascribes the variations to the different proportions of carbon dioxid in the blood, and states that determination of the viscosity will thus reveal insufficiency in the circulation and respiratory ventilation of the blood. Caffein had a marked influence in rendering the blood more viscous, while camphor had the opposite effect. This opposite behavior of these drugs might profitably be borne in mind in prescribing them. In health the viscosity and hemoglobin percentage run parallel, but striking divergences are observed in various diseases.

Deutsche medizinische Wochenschrift, Berlin.

October 15, XXXIV, No. 42, pp. 1793-1832.

86 *Treatment of Pelvic Abscess. (Behandlung der Beckeneiterungen.) H. Tillmanns.
81 *Symptomatology of Tumor in the Cerebellum and Cerebellopontine Angle. (Symptomatologie der Tumoren des Kleinhirns und des Kleinhirnbrückenwinkels.) Gierlich.
82 Congenital Familial Dermatogenic Contracture of the Finger Joints. Henneberg.
83 *Treatment of Carbuncle. M. Grasmann.
84 Treatment of Eczema in Infants by Restriction of Salt. (Behandlung des Säuglingsekzems nach Finkelstein.) O. Mendelsson.

80. **Treatment of Pus Collections in the Pelvis.**—Tillmanns reviews the indications in the different forms of abscesses in the pelvis in men and in women, giving a number of minor points useful to bear in mind as to the best means of access, etc. In conclusion, he warns against any attempt at conservative treatment of tuberculous processes in the pelvic bones as not only absolutely ineffectual, but liable to aggravate the process. He adds further that operations on the soft parts are much less serious than when combined with resection of bone and he has consequently abandoned osteoplastic resections, even the temporary.

81. **Symptoms of Cerebellar Tumors.**—In the first of the two cases described, Gierlich found a sarcoma in the vermiform process of the cerebellum in a boy of 7. The symptoms had been distinguished by the high degree of cerebellar ataxia and intention tremor, especially the locomotor ataxia in the right arm and leg. While contemplating radical removal the patient died suddenly forty-eight hours after the exploratory operation, succumbing apparently to the effects of pressure on the centers in the medulla oblongata. The second patient was a woman of 28 with symptoms of a tumor in the cerebellopontine angle. As the symptoms were early accompanied with atrophy of the optic nerve and loss of the sense of smell, a second tumor in the anterior fossa was assumed, and no operation was attempted. Autopsy revealed, however, merely a single neurofibroma in the pontine angle originating in the glossopharyngeal nerve with much hydrocephalus. The latter was evidently responsible for the atrophy of the optic nerve. The circumstances indicated that the tumor might have been successfully enucleated.

83. **Treatment of Carbuncle.**—Grasmann makes a crucial incision and turns back the four flaps, cutting into sound tissue. The flaps are packed underneath with gauze dipped in a hot solution of boric and salicylic acid. This hot solution seems to be remarkably effectual in preventing hemorrhage and in promoting the expulsion of the necrotic tissue. The surrounding sound skin is protected with a salve against burning from the hot solution. A large moist dressing is applied, and the application is repeated in twenty-four hours, or, if the fever has subsided, not until the second day. He has never had occasion to make further incisions or to ligate any of the vessels.

Fortschritte der Medizin, Leipsic.

September 30, XXVI, No. 27, pp. 849-880.

85 *Instantaneous Roentgen Photography. (Momentröntgenographie.) F. M. Groedel.

85. **Instantaneous Roentgen Photography.**—Groedel expatiates on the value of the improved technic which allows instantaneous *x*-ray pictures to be taken from a distance of over six feet. The proportions are preserved as in orthodiagraphic skiagrams, only the parallel rays being utilized.

Medizinische Klinik, Berlin.

October 11, IV, No. 41, pp. 1539-1594.

86 Treatment of Third Stage of Labor. (Behandlung der Nachgeburtsperiode.) P. Baumm.
87 *Basic Occlusive Meningitis. (Meningitis basilaris occlusiva.) A. Wimmer.
88 Aneurisms of Descending Aorta. (Aneurysmata des absteigenden Teiles des Arcus aortæ.) N. Voorhoeve.
89 *Symposium on Pernicious Anemia. (Umfrage über die Diagnose, Aetiologie und Therapie der perniziösen Anämie.)
90 Pregnancy Complicated with Uterine Cancer. (Schwangerschaft kompliziert mit Uteruskarzinom.) H. Hoffstetter.
91 Treatment of Epilepsy with Borax. H. P. T. Oerum.
92 *Modern Treatment of Glaucoma. W. Felichenfeld.
93 Technic of Intraspinal Administration of Antimeningococcus Serum. (Technik der intralumbalen Anwendung des Meningokokkenheilserums (Kolle-Wassermann.) E. Levy.
94 *Advantages of General Anesthesia with Part of Circulation Cut Off: Autotransfusion. (Welche Vorzüge hat die Narkose bei verkleinertem Kreislaufe, und wie wirkt die von Klapp proponierte Autotransfusion?) H. Ziegner.
95 Bicentennial of Albrecht von Haller. P. Richter.

87. **Posterior Basic Meningitis with Occlusion.**—Wimmer reports with autopsy findings a typical case of circumscribed non-specific posterior basic meningitis. In about 90 per cent. of the cases on record the disease occurred before the age of 3. The children were previously healthy except that in some cases there was preceding catarrh of the upper air passages or a prodromal otorrhea. About 16 per cent. of the cases on record terminated in recovery. Increasing somnolency and emaciation are unfavorable signs.

89. **Pernicious Anemia.**—The editors invited a number of clinicians to express their opinions in regard to the etiology and treatment of pernicious anemia. Among the replies received, His stated that more than half of all the cases resisted treatment. Eichhorst has frequently obtained good results from administration of arsenic kept up for many weeks, as also Naegeli. None had witnessed any benefit from a mountain climate, and none had any theory in regard

to its origin further than that of the action of some toxin. If the toxin can be removed, the affection is arrested at once.

92. **Glaucoma.**—Feilchenfeld relates that a few years ago a suit was brought against the widow of a family physician as the deceased had not recognized his patient's glaucoma and proper treatment had not been instituted in time. It frequently has been observed that nervous by-phenomena, such as vomiting or headache, have diverted attention from the eye and led the physician into a false path. Feilchenfeld discusses the differentiation and warns that adrenalin, alcohol and nicotin had better be avoided. One of the great difficulties is that secondary glaucoma may develop from a neglected iritis. In a case described he was able to arrest the secondary glaucoma by treatment of the acute iritis with atropin, but he emphasizes that atropin should never be given unless there are special indications for it, as he knows of instances where it has induced severe glaucoma. Atropin is especially to be feared with arteriosclerosis.

94. **Dammed Circulation and Autotransfusion.**—Ziegner reports clinical experiences with the circulation dammed by applying an elastic bandage to the limbs. He found that much less of the anesthetic was required and that the patients aroused more quickly and never vomited. The only disadvantage was that the patients seemed to experience the pain of their wounds more intensely. He has experimented on himself and on another medical volunteer, and found the technic for damming of the circulation free from deleterious by-effects.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin.

October, XXVIII, No. 4, pp. 385-507.

96 *Tuberculous Process in Uterus and Tubes in Connection with Myoma. O. Henrich.
97 *Steam Cauterization of the Uterus: Vaporization. K. Frankenstein.
98 Hysterical Fever. (Beitrag zum hysterischen Fieber.) M. Schwab.
99 Multiple Fibroma of the Skin in a Pregnant Woman. (Fibroma multiplex cutis bei einer Schwangern.) L. Goth.

96. **Tuberculous Process in Uterus and Tube with Myoma.**—Henrich remarks that the case here reported is one that well illustrates the triumphs of modern gynecology. The patient was a nullipara of 54 who had bled daily for nearly five months before consulting a physician. The uterus was enlarged and studded with nodules, besides containing a large myoma. The patient was so anemic and weak that she was given digitalis and two quarts of salt solution were infused every day. The pulse became perceptible, the edema subsided, and the urine increased to 1,500 c.c., so that in four days the uterus and adnexa could be removed by supravaginal amputation. The woman recovered rapidly. Examination of the organs showed advanced tuberculosis. The case demonstrates the difficulty of diagnosing genital tuberculosis, especially when combined with myoma. It is noticeable that a tuberculous pyosalpinx is generally located very high, as Henrich has observed in two cases. The prognosis of tuberculosis of the uterus is grave unless the whole process is extirpated in time. Even then the outcome depends on whether the process is primary or secondary. He adds in conclusion that such cases encourage active procedures even with apparently very unfavorable material, and they also show the importance of calling to one's assistance all the diagnostic measures available in all the branches of medicine.

97. **Steam Cauterization of the Uterus.**—Frankenstein has re-examined lately 112 of the 192 women he has treated by vaporization during the last seven years. The period of observation averages 3.3 years. The primary and permanent results, successes and failures, are discussed in detail. The chosen field for vaporization is the combating of climacteric hemorrhage, and in this field the results have been eminently satisfactory. The subjective consequences of vaporization are much superior to those of mutilating operations. It is rarely advisable to apply this technic in case of myoma or during the child-bearing age.

Münchener medizinische Wochenschrift.

October 13, LV, No. 41, pp. 2121-2168.

100 Alternating Heart and Its Relation to Continuous Bigeminal Heart. (Herzalternans und seine Beziehungen zur kontinuierlichen Herzbigeminie.) D. v. Tabora.
101 Pneumococcus Meningitis as Direct Result of Severe Trauma of the Skull Five Years Before. J. Rubin.
102 Operative Treatment of Deformities of Nasal Septum. (Nasenscheidewanddeformitäten.) Kretschmann.
103 *Tenotomy of the Psoas Magnus, Parvus and Iliacus in Spastic Spinal Paralysis in Adult of 40. T. Walzberg.
104 Malaria Endemic at Leipsic. (Einheimische Malaria in Leipzig.) A. Trautmann.
105 *Acute Non-suppurative Thyroiditis. H. Schwerin. Id. W. Burk. Id. F. Apelt.
106 *Laryngismus Stridulus. R. Rahner.
107 Action of Römer's Antipneumococcus Serum in Croupous Pneumonia, with Special Regard to the Leucocytes. May.
108 History of Appendicitis. Doll.
109 Resection of Hip Joint with Interposition of Flap of Muscle. (Fall von Resektion des Hüftgelenks mit Interposition eines Muskellappens.) Ahrens.

103. **Tenotomy of Psoas and Iliacus in Adult.**—Walzberg severed the tendon of the psoas magnus, parvus and iliacus, at the lesser trochanter, to relieve spastic spinal paralysis of long standing in a man of 40. The success was complete, and the usefulness and practicability of the operation—even for adults—seem to be fully established by this case although the patient was lost sight of before the final functional outcome was fully decided.

105. **Acute Non-Suppurative Thyroiditis.**—Schwerin reports two typical cases of acute thyroiditis in a man and woman of about 25, the syndrome completely subsiding in the course of two weeks. He is convinced that this acute affection is more common than generally believed, and that it simply escapes recognition in many instances. Burk describes a recurring thyroiditis in a woman doing translating for ten or twelve hours a day, the constant turning of the head to the left to consult the original work and the friction from the collar having caused irritation of the left lobe of the thyroid with recurring inflammation. Apelt also reports a typical case of exophthalmic goiter developing after an acute thyroiditis which had developed in turn after an abscess in a neighboring tissue.

106. **Laryngismus Stridulus.**—Rahner, in examining the throats of three patients with laryngismus stridulus, found that an edematous subglottic swelling observed at night entirely retrogressed in the morning, so that the findings were normal mornings. He gives an illustration of the morning and evening findings, showing plainly the edematous infiltration which came on only at night.

Zeitschrift für klinische Medizin, Berlin.

LXVI, Nos. 3-4, pp. 201-363.

110 Experimental Study of Interchange of Gases and Consumption of Energy After Eating. (Versuche über Gaswechsel und Energieverbrauch nach Nahrungsaufnahme.) R. Staehelin.
111 Respiratory Metabolism of a Consumptive During the Night Sweats. (Der respiratorische Stoffwechsel eines Phthisikers während des Nachtschweisses.) Id.
112 *Pathogenesis and Etiology of Chronic Gastric Achylia. K. Faber and G. Lange. Commenced in No. 2.
113 Chemical Composition of Leukemic Blood. (Chemische Zusammensetzung des leukämischen Blutes.) F. Erben.
114 Absorption of Fat Under Pathologic Conditions in Man and Animals. (Fettresorption unter pathologischen Verhältnissen beim Menschen und beim Tiere.) M. Adler.
115 *Tests of Kidney Functioning. (Betrachtungen über die Nierenfunktion unter normalen und pathologischen Verhältnissen, unter Berücksichtigung der Formeln von v. Koranyi und von Claude und Balthazard.) F. A. Steensma.
116 *Hypophysis Glycosuria and Its Relation to Diabetes in Acromegaly. (Die Hypophysenglykosurie und ihre Beziehung zum Diabetes bei der Akromegalie.) L. Borchardt.
117 Case of Acute Myeloid Macrolymphocyte Leukemia with Peculiar Inclusions in the Cells. (Fall akuter myeloider makrolymphocytärer Leukämie mit eigentümlichen Zelleinschlüssen.) W. Wechselmann and H. Hirschfeld.

112. **Chronic Gastric Achylia.**—Faber's long article is concluded in this number. He presents evidence to prove that achylia is always traceable to chronic gastritis. In twelve cases carefully studied the achylia was found to be the accompaniment of an advanced stage of chronic gastritis. In four of the twelve cases there had been no symptoms to suggest stomach trouble, and in two other cases the patients had been free from symptoms for a long time, and yet extreme atrophy was found in several of these cases. His arguments against the assumption of an exclusively nervous origin of the achylia are apparently conclusive. It is natural, of course, he says, that a stomach trouble may have an injurious influence on the nervous system—we do not know yet what symptoms a gastritis with achylia may induce, and we are consequently

inclined to attribute the entire trouble to the nervous system alone. One of the cases reported sheds a little light on this phase of the subject: For years the patient had suffered from nervous symptoms, exhaustion, inability to work, and sensations of various kinds, especially violent and persisting headaches which had a very depressing effect and frequently compelled him to resort to morphin—all this along with dyspeptic symptoms and achylia. In the course of years he had been treated by one neurologist after another at dispensaries and with courses in sanatoria, all without relief. After ineffectual treatment by various stomach specialists, he was at last operated on, and the stomach mucosa showed signs of pronounced chronic gastritis. The case is very instructive, Faber remarks, as it shows in what high degree a chronic gastritis may induce nervous disturbances, so that their presence is in no way contradictory to the assumption of the gastritis as the cause of the achylia. A transient suspension of the stomach secretion may occur as a purely functional disturbance, without appreciable anatomic stasis, but if the achylia persists, the cause must be sought in a chronic gastritis. There is no essential difference between achylia accompanying gastric cancer and pernicious anemia and so-called simple achylia. Among the cases related were some in which the gastritis may have been caused by prolonged administration of salicylates or from chewing tobacco, or from elimination into the stomach of toxins in nephritis, diabetes or other infections, but the only factor common to all the cases was that the teeth were in every instance extremely defective, and mastication in consequence had been very imperfect.

115. **Functional Tests of the Kidneys.**—Steensma discusses cryoscopy of the blood and urine and draws the conclusion from his own researches and those reported by others that the formulas in regard to the freezing-point, as made out by Koranyi, Claude and Balthazard, are of comparatively little value. Quantitative determination of the urea and sodium chlorid answer exactly the same purpose.

116. **Hypophysis Glycosuria and Its Relation to Diabetes Accompanying Acromegaly.**—Borchardt tabulates 176 cases of acromegaly from the literature, calling attention to the complicating diabetes in 63 cases and alimentary glycosuria in 8 more, so that in a total of 71 cases, that is, in 40.32 per cent., a pathologic weakness of carbohydrate metabolism was evident. The diabetic metabolic disturbances ranged from slight glycosuria to fatal coma. His figures show that glycosuria of varying intensity accompanies acromegaly more regularly than is observed in any other affection. He is inclined to ascribe the cause of the diabetes to hyperfunctioning of the hypophysis. When the hypophysis is producing its secretion constantly in pathologically excessive amounts, it may induce a persisting diabetes, but the latter may die out as the hypophysis becomes degenerated and thus gradually loses its secreting power. His experimental research seems to sustain this view. In none of the cases of hypophysis tumor on record, unaccompanied by acromegaly, was there any complicating diabetes. In the acromegaly cases complete subsidence of the complicating diabetes was by no means a rare occurrence.

Zentralblatt für Chirurgie, Leipsic.

October 17, XXXV, No. 42, pp. 1225-1256.

118 Treatment of Contracted Flatfoot During Sleep. (Behandlung des kontrakten Plattfusses im Schlafe.) C. Hübscher.
119 Metal Frame for Veil to Wear While Operating. (Operationsschleier mit Metallstützgestell.) P. Hackenbruch.

October 24, No. 43, pp. 1257-1288.

120 *Treatment of Acute Inflammation with Hot Air. (Behandlung akut eitriger Entzündungen mit heisser Luft.) H. Jaelin.
121 Treatment of Abscesses. (Behandlung von Abszessen.) D. Hellin.

120. **Hot Air Treatment of Acute Inflammations.**—Jaelin applies the hot air the day after the abscess has been incised and evacuated and the cavity packed with iodoform gauze. He has thus been treating all phlegmons on the arms and hands during the last six months, and has been surprised at the way in which recovery was hastened, while the patients all lauded the hot air as having banished the pain. He uses the ordinary apparatus for using superheated air, applying it twice a day for two or three hours each time, maintaining a temperature of from 90 to 110 C. (194 to 230 F.) within the frame at half its height. Thus arranged, the temperature on the skin averaged 44 or 47 C. (111 or 116 F.) and the acceleration of the circulation and sweating induced seemed to keep the temperature of the skin within due bounds. Neglected injuries of the fingers which would otherwise have necessitated amputation, healed under this hot-air treatment without requiring operative measures. In three cases of deep phlegmons in the palm and five of deep felons with partial necrosis of the tendon sheaths, healing was complete in from twelve to fifteen days for the former and from eight to fourteen days in the latter, without injury of the tendons. In three other cases of tendon sheath phlegmons, suppurating down to the palm, the lesion healed likewise without impairment of the functions of the tendons. The results observed encourage wide adoption of this method of treating tendon sheath phlegmons and suppurating inflammation in general; notwithstanding that Bier has warned against application of active heat for such lesions until suppuration has ceased. The communication issues from Wilms' polyclinic at Basle.

Zentralblatt für Gynäkologie, Leipsic.

October 17, XXXII, No. 42, pp. 1361-1408.

122 *Advantages of Water Bag Over Version with Placenta Prævia. (Placenta prævia: Hystereuryse oder Braxton Hicks?) W. Hannes.
123 *Delivery Under Scopolamin-Morphin. (Geburten im Skopolamin-Morphium-Dämmerschlaf.) F. Kleinertz.

October 24, No. 43, pp. 1409-1440.

124 *Prophylaxis of Thrombosis. Zurhelle.
125 *Dispensing with Tents. (Sind Quellstifte so notwendig?) O. v. Herff.
126 Favorable Experiences with the Towel Method of General Anesthesia. (Erfahrungen mit der Handtuchnarkose nach Frankenstein.) H. Lotze.

122. **Advantages of Elastic Bag in Placenta Prævia.**—Hannes reports from Küstner's clinic at Breslau that the experiences there are in favor of the use of the elastic water bag dilator rather than the Braxton-Hicks version in management of placenta prævia. The bag offers much the best chances for the mother, and in their experiences with 119 cases of placenta prævia, between 1895 and 1908, 51.2 per cent. of the children were born alive; omitting 13 cases in which the children were already dead, the percentage is 57.5 per cent. living children. Only 0.8 per cent. of the 119 women succumbed to puerperal infection; 6 of the 119 died, a total mortality of 5 per cent., 2 succumbing to air embolism, 1 to the effects of a valvular lesion, 1 to anemia, 1 to persisting hemorrhage from a tear in the cervix, and 1 to pyemia four weeks after the childbirth. The laceration of the cervix occurred from too strong traction on the bag before the soft parts had been sufficiently dilated. More than three times as many children were thus delivered alive by this technic than at other clinics where bipolar version is the rule with placenta prævia.

123. **Deliveries Under Scopolamin-Morphin Anesthesia.**—Kleinertz reports 213 women successfully anesthetized with this technic out of 280; in 19 cases it failed to induce anesthesia. None of the fatalities among the children could be ascribed to the method, but he warns that it is applicable only in an institution where the patient can be kept under constant skilled supervision.

124. **Prophylaxis of Thrombosis.**—Zurhelle comments on the lively discussion at the recent "Naturforscher Congress" as to the advisability of allowing puerperæ to get up early as a means of avoiding thrombosis. He remarks that, as usual on such occasions, the discussion merely served to confirm more obstinately in their opinions those arguing for or against the practice. It seemed to be the impression, however, that it was needed more for the postoperative than for the simple puerperal cases. Zurhelle himself has been much pleased with the results of allowing puerperæ to get up early; during the eighteen months since this has been the practice, no deaths from embolism have been observed. Thrombosis occurred in two cases, but was slight and transient. Fever of 38 C. (100.4 F.) or more is regarded as a contraindication, and also any operation for inflamed adnexa, on account of danger of exudation from the stump, also any circulatory disturbances in the legs or pelvis, and, further, headache after spinal anesthesia. Getting up aggravates the headache. The patients are never compelled to get up, but are told they

may do so, if they wish, and the advantages are explained to them. The change from the bed to the chair at the bedside for twenty minutes is insisted on with greater emphasis for very anemic and corpulent women, as the danger of thrombosis is greater in these conditions. The woman is helped out of bed very carefully, supported on both sides. The second time she is allowed to sit up for an hour or two, morning and afternoon. The general condition rapidly improves, catheterization of the bladder is not needed, and there are none of the pains in the back frequently complained of when the patient lies long in bed. He urges all who try this method to let him know their experiences, keeping the gynecologic and the obstetric cases separate, as he is collecting material for a comprehensive monograph on the subject for next year. Large numbers are not so important for his purpose as every single case in which untoward effects from the early getting up became evident. It has been his experience that working women are less subject to thrombosis than others, and he asks for the experience of others in this line. He also hopes that physicians who have not encountered cases of thrombosis will tell him to what they attribute this exemption from mishaps. In Holland, for instance, thrombosis is very rare.

125. **Tents are Superfluous.**—Herff states that he has not had occasion to use tents more than once in the course of the last seven years, although he has had to dilate the uterus in 800 cases, mostly for curetting. In a few cases he used gauze, but in all the others he preferred instrumental dilatation, and has never had a mishap, although the dilatation is done by some student, as a rule, under his supervision. He teaches that tents are unnecessary, except possibly with a hydatidiform mole.

Ugeskrift for Læger, Copenhagen.

August 27, LXX, No. 35, pp. 997-1020.

127 *Dietetic and Medicinal Treatment of Gastric Ulcer. (Mavesaarets Behandling.) A. Borgbjærg. Commenced in No. 34.

September 3, No. 36, pp. 1021-1046.

128 *Ultimate Outcome of Cases of Tuberculosis with and without Tubercle Bacilli in the Sputum. (Nogle Forhold vedrørende Tilfælde af Lungetuberkulose med og uden Tuberkler i Opspyttet.) T. Petersen.

127. **Treatment of Gastric Ulcer.**—Borgbjærg reviews the literature on the dietetic and medicinal treatment of gastric ulcer in the last few years, and relates his own experience. He agrees with Lenhartz and Thesen that the stomach mucosa is not sensitive, and that consequently the pains experienced are the result of the spread of the inflammation into the lymphatics or of traction on the parietal peritoneum from the contractions of the stomach. In treating an ulcer, therefore, it is important to avoid all articles of diet liable to promote peristalsis. For this reason also the food should be given in very small quantities; if there is much thirst water can be supplied by the rectum. Thesen allows nothing but lukewarm milk at first, a tablespoonful at a time, to a total of 250 c.c. (8 ounces) during the day, increasing an ounce each day during the first week; with one raw egg the second day, two the third, three the fourth, and so on, with nothing but the milk and raw eggs until the seventh day. At the same time he gives 10 gm. (150 grains) bismuth daily, believing that it diffuses into the lymphatics and arrests the lymphangitis. His experiences with thirty-five patients thus treated during the last two years have been favorable. Benefit is also liable to be obtained from olive oil, and Borgbjærg has had some striking results in this line, especially when bismuth is given with it, using a 7 to 10 per cent. suspension. In one of his cases hematemesis was the first symptom, followed by sudden pain in the stomach region, hypersecretion and morning retention. During the following six months the man lost constantly in weight, with no improvement under dieting and a course of Carlsbad water. He took 100 gm. (3 ounces) olive oil every morning, and the pains promptly subsided, while he gained nearly 25 pounds in weight and the suspicion of cancer was dispelled. The combination of olive oil and bismuth generally proves more effectual than either alone.

128. **Ultimate Outcome of Cases of Tuberculosis with or Without Tubercle Bacilli in the Sputum.**—Petersen tabulates the cases of pulmonary tuberculosis treated in three northern sanatoria and by Turban at Davos, with respect to the positive findings in the sputum just before and at the close of the sanatorium treatment. Examination from four to six years later shows that only 27.3 per cent. of those with bacilli in the sputum at that time have regained full earning capacity and only 9.7 per cent. are partially restored to work, while 55.5 per cent. have died in the interim. Those without bacilli show 73.4 per cent. with complete and 16 per cent. with partial restoration of their earning capacity, while only 4.7 per cent. have died. These figures include 2,623 patients with positive and 1,064 with negative findings in the sputum.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

DISEASES AND SURGERY OF THE GENITOURINARY SYSTEM. By Francis S. Watson, M.D., Lecturer on Genitourinary Surgery, Harvard Medical School. Assisted by John H. Cunningham, Jr., M.D., Visiting Surgeon to the Long Island Hospital, Boston. Vol. I. The External Genitals. The Prostate and Bladder. Vol. II. The Kidneys and Ureters. Cloth. Pp. 1101, with illustrations. Price, $12.00 per set. Philadelphia: Lea & Febiger, 1908.

ATLAS CLINICAL SURGERY, with Special Reference to Diagnosis and Treatment. By Dr. Ph. Bockenheimer, Professor of Surgery in the University of Berlin. English Adaptation by C. F. Marshall, M.D., F.R.C.S., Late Assistant Surgeon to the Hospital for Diseases of the Skin, London. Three Volumes. Flexible Leather, with illustrations. Price, $24.00 per set. New York: Rebman Co.

DIE LEHRE VON DER KONGENITALEN TUBERKULOSE mit besonderer Berücksichtigung der Placentartuberkulose. Von Anton Sitzenfrey, I. Assistenten der Universitätsfrauenklinik und Privatdozenten für Geburtshilfe und Gynäkologie an der Universität in Giessen. Paper. Pp. 156, with illustrations. Price, $1.40. Berlin: Verlag von S. Karger, 1909.

TUBERCULOSIS IN MASSACHUSETTS. Prepared by the Massachusetts State Committee for the International Congress on Tuberculosis, held at Washington, D. C., September, 1908. Edited by Edwin A. Locke, A.M., M.D. Cloth. Pp. 223, with illustrations. Boston: Wright & Potter Co., 1908.

SYPHILIS UND NERVENSYSTEM. NEUNZEHN VORLESUNGEN FUR PRAKTISCHE AERZTE, NEUROLOGEN UND SYPHILIDOLOGEN. Von Max Nonne, Oberarzt am allgemeinen Krankenhaus Hamburg-Eppendorf. Second Edition. Paper. Pp. 699, with illustrations. Price, $4.80. Berlin: Verlag von S. Karger, 1909.

DIE KOMPLIKATIONEN DER STIRNHÖHLENENTZÜNDUNGEN. Von P. H. Gerber, a.o. Professor und Direktor der Königl. Universitäts-Poliklinik für Hals- und Nasenkranke in Königsberg i. Pr. Paper. Pp. 457, with illustrations. Price, $3.60. Berlin: Verlag von S. Karger, 1909.

APPLIED SURGICAL ANATOMY. By George Woolsey, A.B., M.D., Professor of Anatomy and Clinical Surgery in Cornell University Medical College. Second Edition. Cloth. Pp. 601, with illustrations. Price, $4.50. Philadelphia: Lea & Febiger, 1908.

LECTURES ON PRINCIPLES OF SURGERY. By Stuart McGuire, M.D., Professor of Principles of Surgery and Clinical Surgery University College of Medicine, Richmond, Va. Cloth. Pp. 480. Price, $4.00. Baltimore: Southern Medical Publishing Co., 1908.

FORTIETH ANNUAL REPORT OF THE SECRETARY OF STATE ON THE REGISTRATION OF BIRTHS AND DEATHS, MARRIAGES AND DIVORCES in Michigan, for the Year 1908. Cloth. Pp. 180. Lansing: Wynkoop Hallenbeck Crawford Co., 1908.

ANATOMIE UND MECHANISMUS DER SKOLIOSE. Von Carl Nicoladoni, Professor der Chirurgie an der Universität Graz. K. K. Hofrat. Cloth. Pp. 58, with illustrations. Price, $2.25. Wien: Urban & Schwarzenberg, 1909.

DIE PLACENTA MARGINATA und ihre Entstehung. Von P. Sfameni, Professor und Direktor der Universitäts-Frauenklinik in Perugia. Paper. Pp. 70. Price, $0.60. Berlin: Verlag Von S. Karger, 1908.

TWENTIETH BIENNIAL REPORT OF THE STATE BOARD OF HEALTH OF CALIFORNIA For the Years 1906 to 1908. Paper. Pp. 227. Sacramento: W. W. Shannon, Superintendent State Printing, 1908.

SYPHILIS OSSEUSE (SYPHILIS ACQUISE). Par Louis Spillmann, Professeur agrégé à la Faculté de médecine de Nancy. Paper. Pp. 134, with illustrations. Price, $0.85. Paris: G. Steinheil, 1909.

THE PHYSICIAN'S VISITING LIST FOR 1909, with special memoranda. Pocket size. Flexible leather, with pocket and flap. Pp. 114. Price, $1.00. Philadelphia: P. Blakiston's Son & Co.

THIRTY-FIFTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MICHIGAN FOR THE YEAR 1907. Cloth. Pp. 188. Lansing: Wynkoop, Hallenbeck, Crawford Co., 1908.

CATALOG OF OFFICERS AND FELLOWS OF THE MASSACHUSETTS MEDICAL SOCIETY, Jan. 1, 1908. Paper. Pp. 169. Boston: Published by the Society, 1908.

UEBER APPENDICITIS WAEHREND SCHWANGERSCHAFT UND GEBURT. Von Gerhard Renvall. Paper. Pp. 117. Price, $1.00. Berlin: Verlag von S. Karger.

BUDDHISM AND IMMORTALITY. By William Sturgis Bigelow. Cloth. Pp. 75. Price, $0.75. New York: Houghton Mifflin Co., 1908.

IMPROVEMENT AND DETERIORATION. By J. T. Searcy, M.D., L.L.D., Tuscaloosa, Ala. Paper. Pp. 23. Hospital Print.